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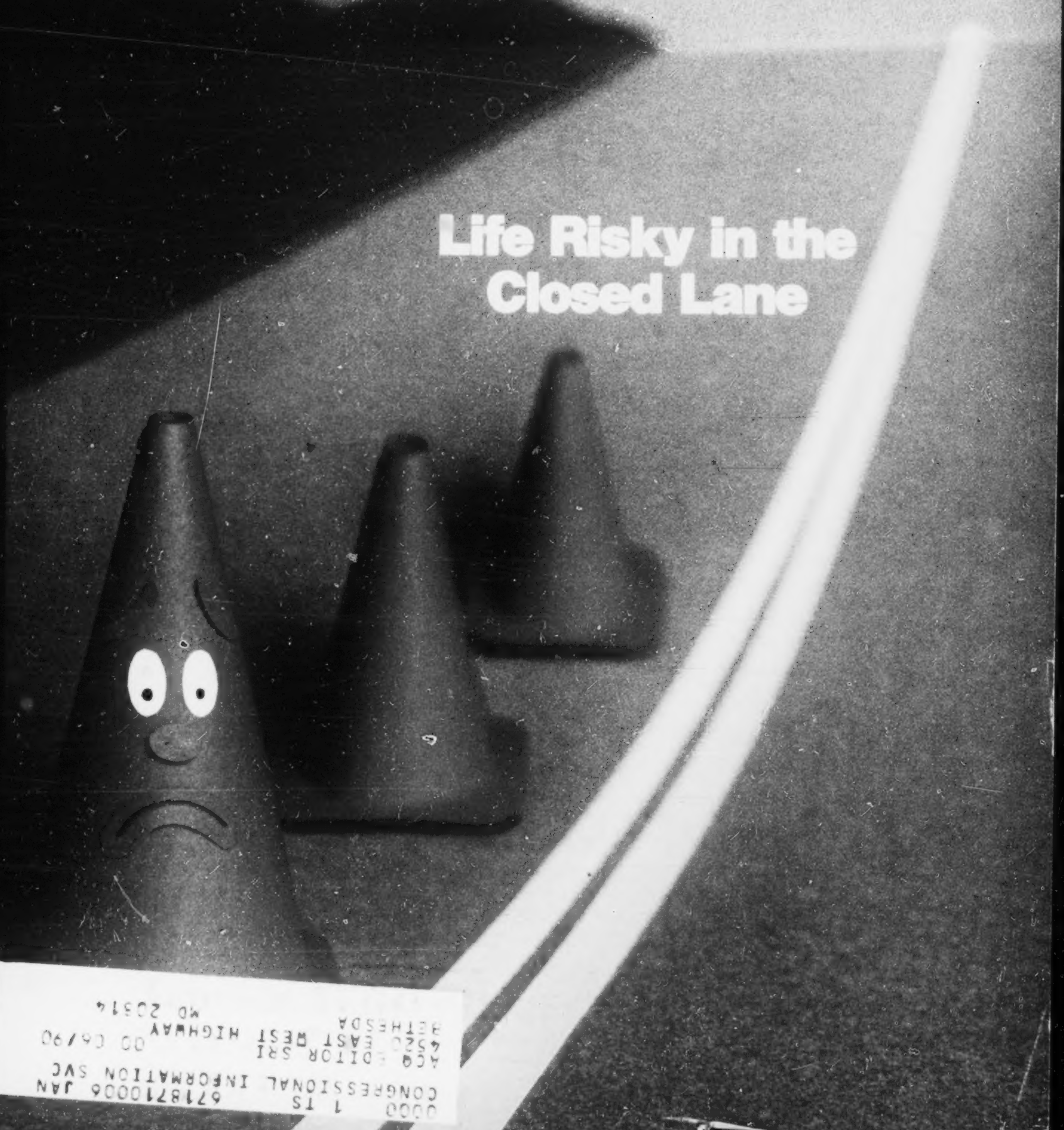

Life Risky in the Closed Lane

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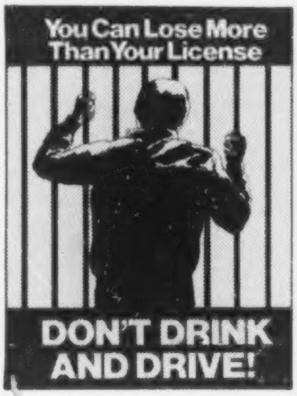
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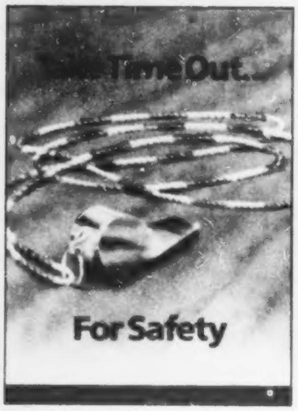
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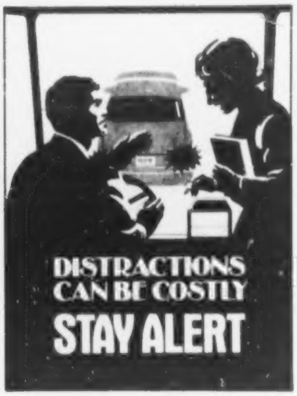
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STAY ALERT

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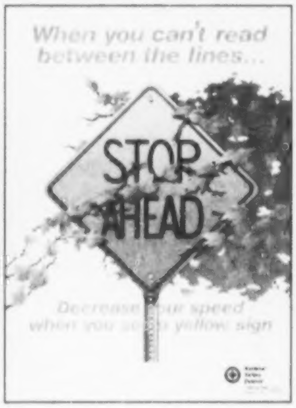
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STOP AHEAD
Decrease your speed when you see a yellow sign

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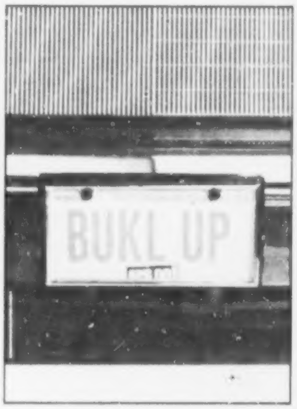

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January/February 1990

National Safety Council

TRAFFIC SAFETY

Vol. 90 No. 1

AIR BAGS AT LAST 6
MICHAEL P. MALONE
New cars to come with more safety features

WHAT'S REALLY HAPPENING OUT THERE? 10
Survey to check up on auto options

STATES OF INTOXICATION 11
JIM CASTELLI
Where drunk drivers are most common

LIFE RISKY IN THE CLOSED LANE 12
THOMAS FRISBIE
States seek new ways to protect highway workers

LOOKING WITHOUT SEEING 16
RAYMOND SCHUESSLER
What professionals should know about drivers' vision

STATES' EXPERIENCE WITH INEXPERIENCED DRIVERS 18
JERRY TANNAHILL AND MICHAEL SMITH
Update on status of provisional licensing

OSHA TIGHTENS SAFETY BELTS 22
JIM CASTELLI

SAFETY IN THE HEARTS AND MINDS OF THE PUBLIC 25
GAIL MANSFIELD
Highlights of the 77th Safety Congress

2 New Safety Posters
4 Today's Traffic
5 Shortcuts
27 Events
28 Statistics
30 New Products
31 Library
34 Two-Way Street

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Home Office, 444 N. Michigan Ave., Chicago 60611, (312) 527-4800

Printed in U.S.A.

Stock No. 311.03-010

Traffic Safety is dedicated to the prevention of traffic accidents and crash loss reduction through the presentation of objective information and responsible opinion to official agencies, public support groups, driver education teachers, and the motor transportation industry. The views expressed do not necessarily reflect the beliefs or policies of the National Safety Council, but they are presented in the conviction that the pressing social problem of traffic accidents can best be resolved through freedom of expression and open debate.

Publisher: Kevin H. Axe (312) 527-4800, ext. 7101

Editor: Roy Fisher (312) 527-4800, ext. 7108

Coordinator: Richard Frisbie

Managing Editor: Susan-Marie Kelly, (312) 527-4800, ext. 7114

Associate Editors: James W. Lahey and Peter Minetos

Art Director: Anne F. Malone

Cover: Constructs Studio, art; Terry Vitacco, photo

Director, Publications Marketing: Kevin Shanley, (312) 527-4800, ext. 7401

Advisors

Noel Bufe, Ph.D., *director, Traffic Institute, Northwestern University, Evanston, Ill., vice president for traffic*; Walter D. Weiss, *group director of safety, Leaseway Transportation Corp., Birmingham, Mich., vice president for motor transportation*; Neil Boot, *director, driver improvement programs*; Ted E. Dudzik, *traffic law enforcement and police records specialist*; Jan Hazlett, *school transportation safety specialist*; Tim Kennedy, *occupant restraint specialist*; Al Lauersdorf, *alcohol programs administrator*; John McCarthy, *manager, program development and training, driver improvement programs*; Fred N. Ranck, P.E., *manager, traffic safety*; Lester B. Sokolowski, *director, motor transportation*; James Solomon, *administrator of training, driver improvement programs*; Richard L. Tippie, *director, transportation safety*.

TRAFFIC SAFETY (ISSN 0041-0721) is published bimonthly by the NATIONAL SAFETY COUNCIL, 444 N. Michigan Ave., Chicago, Ill. 60611. Copyright © 1990 by National Safety Council. Printed in U.S.A. Second Class postage paid at Chicago, Ill. and at additional offices. POSTMASTER: Send address changes to National Safety Council, 444 N. Michigan Ave., Chicago, Ill. 60611.

U.S. Subscription rate: $13.80 to members of the National Safety Council; $17.25 to non-members. Quantity and foreign rates available on request.

National Safety Council
Chartered by the Congress of the United States
David P. Curley, Chairman, Board of Directors
T. C. Gilchrest, President
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Clean Air Controversy

ACTS Backs Off Vehicle Vapor Devices

The American Coalition for Traffic Safety (ACTS) has joined other safety groups, including the National Safety Council, in expressing reservations about placing vapor recovery devices on vehicles instead of gas pump nozzles.

Congress is presently considering a revision of the Clean Air Act that would capture explosive gasoline vapors before they could contaminate the atmosphere. The revision would prescribe the action at either the pump or on the car.

Whether capturing the vapors on board vehicles would present grave dangers is not yet clear.

Besides ACT and the Council, other groups expressing concern about the proposal include the Insurance Institute for Highway Safety, the American Automobile Association, the National Highway Traffic Safety Administration and the National Transportation Safety Board.

Missouri Shows 'Em Safety

Winter highway maintenance training in Missouri carries a strong safety segment, according to *Better Roads*.

The training focuses on safe use of chemicals and abrasives, according to Ronald Caddell, maintenance area supervisor for the state. Teaching includes proper mixing and preparation, why the materials are applied at different rates, operating and calibrating special equipment, checking to see that lights are in working order, when to change the angle of the plow, understanding operations that interfere with the normal flow of traffic and knowing where spare parts are stored.

GM Eyes New Safety Frontier

Now that airbags to protect passengers in frontal crashes are a reality, General Motors Research (GMR) is looking at the new frontier — protection in side crashes.

GMR studies have found:

- Side crashes account for some 32 percent of fatalities and account for some 8,000 deaths a year;
- Most frontal collisions occur at night and side impacts during the day;
- Frontal crashes generally involve young people and a high incidence of drug or alcohol involvement while side impacts involve older drivers with little drug or alcohol impairment.

Currently, GMR is studying the use of foams and energy-absorbing body panels. Another area of research is designing padding and arm rests based on data from studies of side-impact injuries.

Retting Wins Volvo Award

Richard A. Retting, head of Traffic Safety Division, New York City Department of Transportation, has been named winner of the *Volvo Traffic Safety Award*.

He received the prize for two projects: Queens Blvd. and Interboro Parkway. On the Queens Blvd. project, deaths and injuries dropped by 60 percent after Retting's corrective measures. On the Interboro project, he upgraded road conditions and updated traffic markings, some of which dated from the 1930s.

The prize was 500,000 Swedish krona ($72,709).

Iowa Targets Seniors

The Iowa Department of Transportation has launched a *Senior Driver Enrichment Program*.

The campaign uses driving simulators and films to "increase senior citizens' understanding of their driving capabilities." The older drivers will be asked to use the training material to react to potentially dangerous driving situations and thus assess their capabilities.

The state has some 297,000 drivers 65 years and older and they comprise some 15 percent of the total licensed drivers.

Ohio Starts School Bike Drive

Each of Ohio's 3,039 elementary schools now has a copy of the *Complete Bicycling Education Program*.

The package consists of a teacher's guide and a video. The program is designed to teach 4th, 5th and 6th graders to be predictable and visible bicyclists.

The Ohio Department of Transportation is using the program developed by the Bicycle Federation of America.

North Carolina Backs Cycle Safety

North Carolina recently passed legislation to support a motorcyle safety program, becoming the 34th state to do so.

The program will be delivered by the Department of Community Colleges through their institutions.

Funding will come from a $3 tax on each registered private motor cycle. The law also allows the state insurance commissioner to lower insurance rates for those successfully completing the program.

Ford Faces the '90s

Ford Motor Co. is meeting the 1990 model year with an emphasis on safety.

More models in the new lines will have either standard or optional air bags and anti-lock brake systems (ABS).

The Town Car and Scorpio come equipped with air bags for the driver and front seat passenger. The Mustang, Taurus, Sable, LTD Crown Victoria, Grand Marquis and the Mark VII will have factory driver's side air bags.

ABS is standard on the Probe GT and optional on all versions of the Taurus, Sable and Town Car. In addition, the Aerostar, Econoline and Club Wagon have rear-wheel ABS.

Ford is also reacting to complaints about unintended acceleration by adding an automatic transaxle shift lock to the Festiva, Tracer and Probe. To move the shift selector out of Park, the driver must depress the brake pedal, reports *Super Automotive Service*.

Hazmat Crackdown

The House subcommittee on surface transportation of the Public Works and Transportation Committee is considering a bill to tighten regulation of the shipment of hazardous materials over the nation's roadways. The subcommittee has held hearings on several proposed bills in the field and in Washington and is now working on putting together a bill based on what it learned.

Proposals include changes to increase training requirements for drivers, make regulations more uniform from state to state and keep track of all hazardous cargo with a nationwide computer system. One subcommittee member, Rep. Douglas Applegate (D, Ohio), believes that government, rather than the chemical industry, should track the half a million daily shipments of hazardous materials. His bill would shift control of hazardous materials shipments, sometimes abbreviated on road signs as "hazmat," from the chemical industry to federal, state and local governments.

A 1980 agreement between the Transportation Department and chemical manufacturers set up an industry-run system called Chemical Transportation Emergency Center, or Chemtrec. It gives local police, fire-fighters and others a number to call for information so they will know how to handle various chemicals in an emergency.

But Applegate said the "answering service" is useful only when the materials involved are known, and this may be difficult at the site of a crash where chemicals have spilled out and the vehicle is smashed or ablaze. He said placards required on trucks carrying hazardous materials often are missing or incorrect and the Transportation Department's emergency response guidebook is not always up to date.

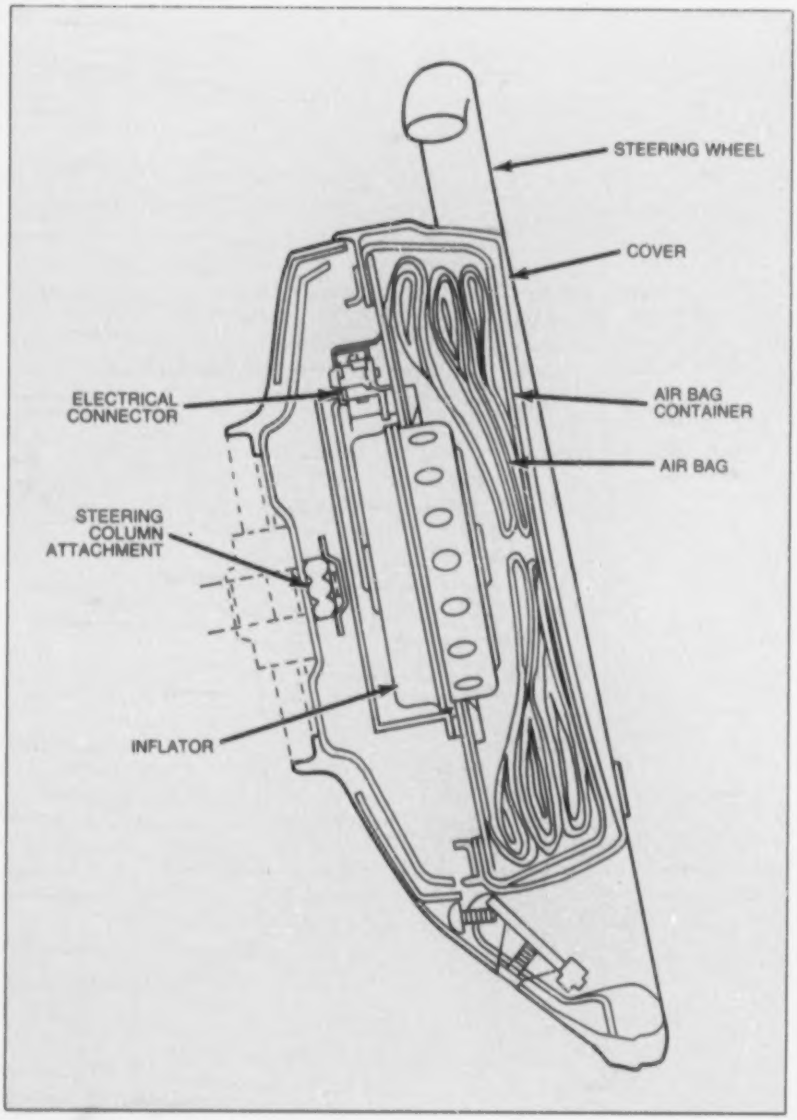
Clifford J. Harvison, president of the National Tank Truck Carriers, said the tank truck industry supports legislation that would make laws more uniform regarding hazardous materials: "Trucks cross thousands of jurisdictional boundaries daily, and carriers cannot tailor the equipment and operational characteristics of each truck and driver to meet the singular requirements of a given community."

Frederick H. Nesbitt of the International Association of Fire Fighters said a system is needed to give emergency personnel quick information about any hazardous cargo involved in an accident: "The unnecessary dangers our fire-fighters face every day due to an antiquated reporting system are inexcusable in this age of high technology."

AIR BAGS AT LAST

New cars to come with more safety features

BY MICHAEL P. MALONE



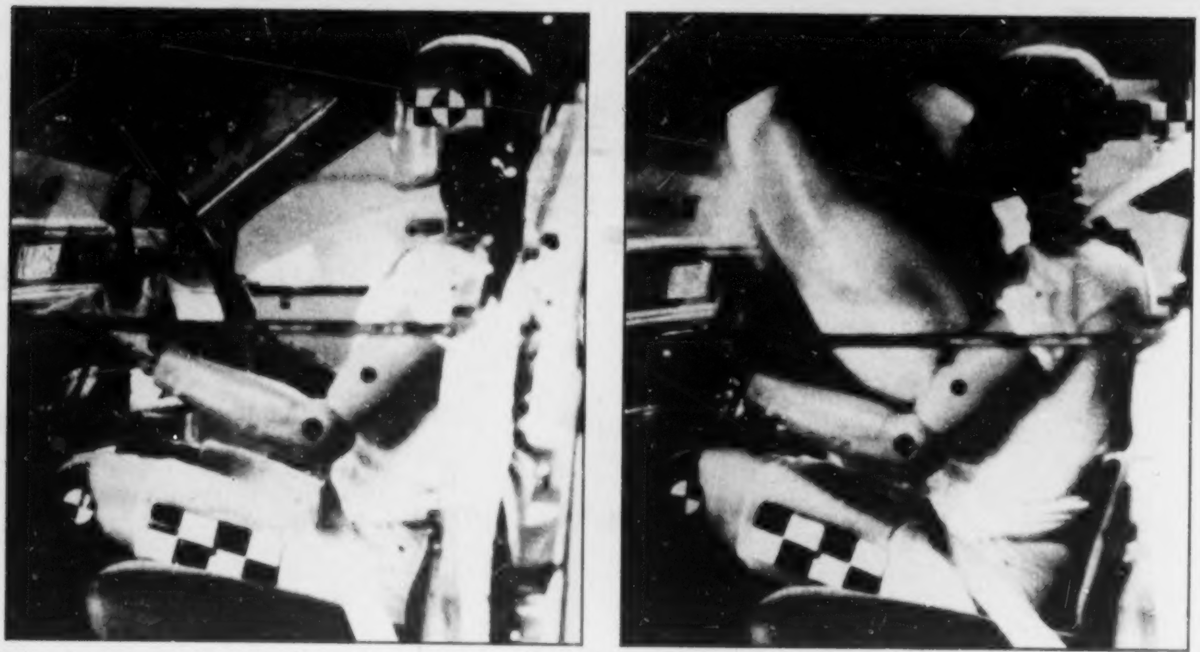
How an air bag works: Upon impact, a sensor converts a cannister of sodium azide into nitrogen gas. The gas fills the folded air bag and it pops out of the center of the steering wheel.

WITH THE introduction of the 1990 automobile models, a safety feature once thought "futuristic"will unobtrusively become a fact of life. Air bags, at least on the driver's side, will be offered as standard equipment on 2.2 million new automobiles. Air bag development has been marked by initial consumer rejection and continued confusion concerning their operation. Their 20-year history sets the stage for the next wave of safety devices to follow.

New safety features often trickle down from luxury models.

It is a potentially tragic irony, but the existence of air bags could make cars less safe. A recent national survey conducted by the American Coalition for Traffic Safety (ACTS) found that only 68 percent of the drivers surveyed understood that air bags do not replace safety belts.

The truth is that drivers who switch from using a lap/shoulder belt to using only an air bag actually increase their risk of fatality by 41 percent, according to a recent study by Leonard Evans, of the Operating Sciences Department at General Motors Research Laboratories. "The belts show substantial effectiveness for crashes in directions for which the air bag does not deploy," said Evans. Belts also prevent driver ejection, a major cause of traffic deaths. Air bags do not substantially influence the risk of being thrown from the car in a crash.



This photo sequence from the General Motors Milford Proving Ground shows a test dummy receiving air-bag protection from a 70-mph crash. The bag opens in 1/30th of a second, faster than a person can blink.

Education

It is clear that a great deal of consumer education will be needed to explain the role air bags will play in reducing the chance of serious injury and death in head-on collisions. The same ACTS survey cited showed drivers concerned that the air bags might be activated by mistake or that the driver could be trapped by the bag, or even suffocated. In fact, air bags require the simultaneous triggering of more than one sensor to be activated and, once activated, they inflate in 1/10 of a second, less time than it takes to blink your eye. They begin to deflate immediately. In control tests and field reports, drivers were able to maintain control of the vehicles. As car makers and safety groups begin to make the consumer aware of the actual facts, some of these misconceptions should subside.

Air bags are "old tech" by today's standards. The first air bags were in research and development as early as 1969 and were test marketed in the mid-seventies as a relatively expensive option car buyers stayed away from in droves. While auto manufacturers have been criticized for foot-dragging over the past 20 years, they've had time to perfect the technology. The air bag is not a new-fangled gadget, but a safety system that has been tested to the point of determining what the effect on asthmatics will be of the dust released during deployment of the bag. (The bags pose no hazard to asthmatics.)

Despite air bags, safety belts still needed.

Other Safety Features

While we await the gradual saturation of the nation's on-road fleet with air-bag-equipped cars, a variety of new safety features are in different stages of development. None are, perhaps, as dramatic as air bags in directly affecting survival rates in crashes, nor are they likely to stir the long debate between safety experts and car makers that air bags generated.

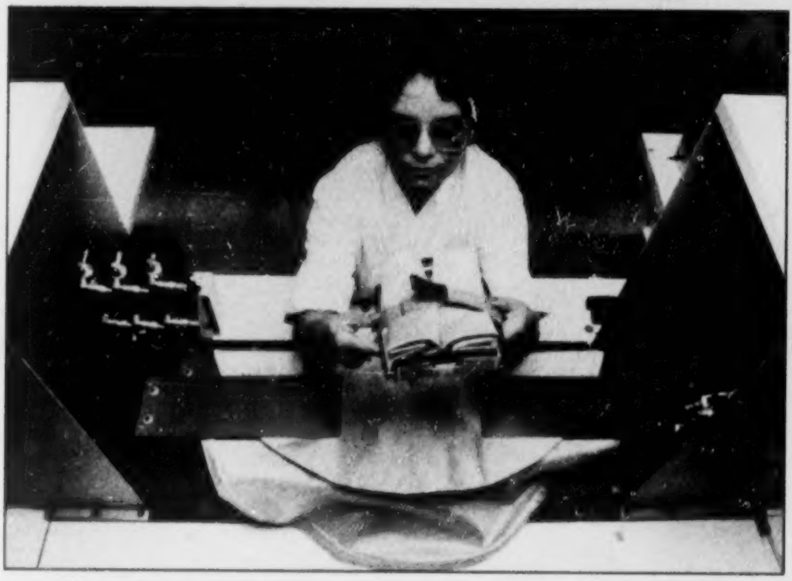
The history of the air bag shows one way new safety features become part of automobile design. After an initial rejection by consumers and a reluctance on the part of manufacturers to produce the costly option, it took a preponderance of evidence and federal regulation to make a passive restraint system (either air bags or automatic seat belts with shoulder harness) mandatory.

Other safety features are introduced without the consumer even knowing about them. Some changes in design and materials, which add only minor increases to the price of a new car, will continue to be made and help reduce the chance of serious injury or death. New interior materials of foam for interiors and reinforced side door guard beams are two examples of improvements being made to protect passengers, especially in the event of a side-impact collision. The car buyer and passenger will not likely be aware of them.

Safety Options

However, if an improvement is too costly to be absorbed into the normal price increases for new models, it is often introduced as an option. Rear window defoggers were once an option item now standard on almost every model. Anti-lock braking systems (ABSs) are a current example of this pattern. ABSs shorten stopping distances and increase control through computer monitoring of wheel rotation. When the computer senses the brakes may lock, it sends a signal to a hydraulic modulator, which can apply and release pressure up to 15 times per second. The driver will still be applying full pressure to the brake pedal; the computer will "pump" the brakes automatically.

ABSs were initially introduced as part of an option package on the highest-priced models. As the economies of scale worked to reduce costs, and as consumer demand grew along



Assembly workers at the TRW plant in Mesa, Ariz., fold air bags like parachutes.

with insurance rebates for cars with ABSs, the safety feature became a standard option on many models. In the case of General Motors, the ABS was installed on 37 models in 1989 and will be installed on 47 models in 1990. More importantly, on the majority of those vehicles it will be standard equipment.

Unlike the air bag of the 1970s, today's safety options may hold more interest for consumers. According to a 1987 study by Patrick S. McCarthy of Purdue University for the AAA Foundation for Traffic Safety, consumers today are willing to pay for safety. His study shows that if a buyer believes a car is safe, the probability of purchase increases. In fact, those cars defined as "very safe" (based on government vehicle crash tests) have double the probability of purchase.

'Sexy' Safety Features

Some safety features also have "sex appeal." Dual side-view mirrors may increase a driver's rear and side visibility and make changing lanes a safer maneuver, but many car buyers just like their looks and purchase them along with other trim and styling options. Some of the "cockpit" instrumentation, which will likely be introduced in the near future, has a high-tech appeal and will follow the pattern of starting out life as part of an option package for higher-priced models before becoming a standard option on most cars.

Whichever route toward consumer acceptance and widespread use future safety options take will depend on their price, consumer appeal and consumer perception of their worth as a safety feature.

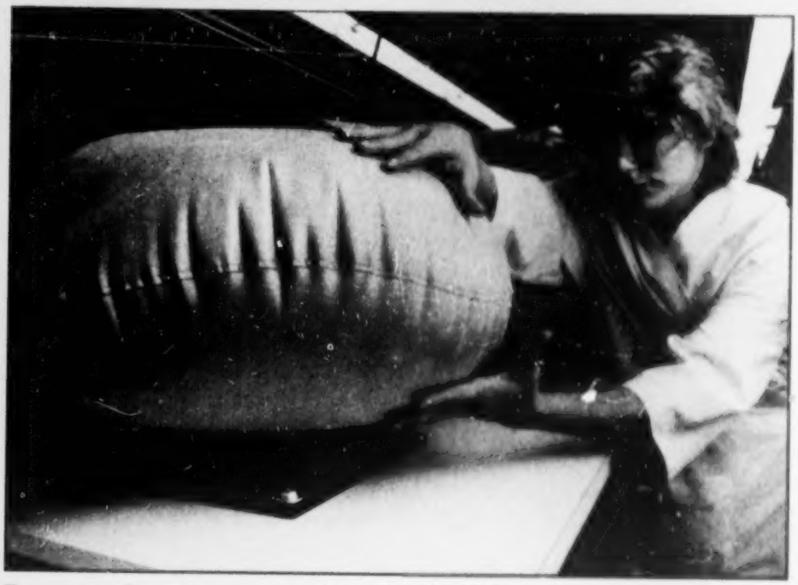
Study shows higher probability of purchase for cars that rate safe.

While there is no major safety device comparable to the air bag on the horizon, a number of features are in the late stages of development. Testing will likely be introduced in production cars during the next decade. They include:

- Traction Control — An extension of the ABS concept, which adds computer control of engine power to improve stability, especially under adverse driving conditions.
- Heads-Up Display — Adapted from military aircraft technology, this feature would project important dashboard information onto the windshield, closer to the driver's field of vision. This is already available as an option on upscale Nissan models. In their design, the car's speed is projected onto the lower left windshield. Nissan claims the display cuts data-recognition time by 30 percent and reaction times by a tenth of a second. The windshield display is also intended to reduce driver fatigue. But care has to be taken to make sure too much information is not projected, making the option more confusing than helpful.

According to Nissan spokesman Jim Bowman, the cost for the feature is relatively modest. "Heads-up display could easily be made available on upper trim levels of most cars," he said. The display is currently part of a $1,500 option package offered by Nissan. A different approach would deeply recess displays in the instrument panel, which would make it unnecessary to change the focus of the eyes when shifting between the road and instruments. This system would be shielded from direct sunlight and be visible during all conditions.

- Collision-Avoidance Warning System — Sonar/radar technology can be used to warn drivers of objects behind the car while backing up. Supplementing rear and side-view mirrors, this system would offer visual and audio warning when objects are in the path of a car moving in reverse. It would be especially useful in eliminating the "blind spots" now common while relying only on mirrors. The *Millennium*, a Chrysler Corporation test car, is equipped with the warning system. How soon might it be offered in production cars? "We are getting close," said Chrysler spokesman Ben Dunn. "It won't be put on all vehicles, but some improvements could be seen in two or three years."
- Four-Wheel Steering (4WS) — Introduced by Honda, 4WS is offered as a fairly expensive option (about



Factory test shows what an expanded air bag looks like.

$1,500) on the *Prelude Si*, and only 15 percent of the *Preludes* are sold with the 4WS. Mazda offers a different 4WS technology on its top-of-the-line Model 626. Four-wheel steering serves two purposes. It reduces the turning radius for slow-speed maneuvers, such as U-turns and parallel parking, by turning the rear wheels in the opposite direction from the front wheels. At higher speeds, the safety feature comes into play when the rear wheels turn slightly in the same direction as the front.

Theoretically, this would reduce the chance of fish-tailing and improve handling when changing lanes or engaged in an emergency maneuver on the highway. The safety benefit has not been so overwhelmingly proven that other car makers are rushing to equip their own cars with 4WS. According to J.D. Powers and Associates, who conduct customer satisfaction surveys for the auto industry, those who have cars with 4WS love it. There just aren't that many who choose the option.

- Night Vision Enhancement — Another stepchild of military technology that could find its way into the family car is infrared night vision enhancement. Potentially, such a system could make it easier for older drivers and those with night vision deficiencies to see the road. It could also reduce accidents which result from foggy conditions.

- Active Suspensions — A combination of a large on-board computer, sensors throughout the car and improved hydraulics could result in a suspension that anticipates rough pavement through sonar sensors, then automatically adjusts the suspension for the smoothest ride. It takes into account speed, throttle position, steering wheel angle and other factors. Until advances in technology can reduce the costs of the computer and the hydraulic power required, this option is likely to remain in development. Experts anticipate it may be available in five to 10 years if costs can be reduced. A simplified version of the system is currently available on the Nissan *Maxima*, which uses sonar to detect uneven road surfaces and then tightens the suspension in anticipation of a bumpy ride.

No invention yet to substitute for watching where you're going.

- Breath Analyzer Interlock — Already in use in a handful of states, this device connects a breath analyzer to a vehicle's ignition. To start a car equipped with the interlock, the driver must first blow into the analyzer. If the driver's blood alcohol level is above the setting on the device, the car will not start. A short series of "breath pulses" is used as an identification code for the driver and deters others from taking the test for the driver. These devices can be made a required condition of probation in convictions for driving while intoxicated (DWI). Although it was not introduced as a "safety" device, obviously the fewer drunken drivers there are on the roads, the safer they — and everyone else — will be.

Not all high-tech options will make cars safer. Turning cars into mobile offices with cellular phones, facsimile machines, built-in computers loaded with phone numbers, addresses, daily schedules and even road maps could distract drivers. And no one has invented a substitute for keeping your eyes on the road.

Statement of Ownership,
Management and Circulation
(Required by 39 U.S.C. 3685)
Title of Publication: Traffic Safety
Publication No.: 536360
Frequency of Issue: Bi-Monthly
Location: 444 N. Michigan Ave., Chicago, IL 60611
Publisher: Kevin H. Axe, (same address)
Editor: Roy Fisher, (same address)
Managing Editor: Susan-Marie Kelly, (same address)
Owner: National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (*There are no bondholders, mortgages or other security holders.*)
Date of Filing: October 23, 1989

Average Number of Copies Each Issue During Preceding 12 Months

Total Copies Printed	19,244
Paid Circulation (dealers,etc.)	none
Paid Circulation (mail subscription)LF18,061	
Total Paid Circulation	18,061
Free Distribution (samples, etc.)	56
Total Distribution	18,117
Copies Not Distributed	1,127
Returns	none
Total	19,244

Actual Number of Copies of Single Issue Published Nearest to Filing Date

Total Copies Printed	18,570
Paid Circulation (dealers,etc.)	none
Paid Circulation (mail subscription)LF18,434	
Total Paid Circulation	18,434
Free Distribution (samples, etc.)	27
Total Distribution	18,461
Copies Not Distributed	1,109
Returns	none
Total	18,570

I certify that the statements made here are correct and complete. Kevin H. Axe, publisher.

WHAT'S REALLY HAPPENING OUT THERE?

Survey to check up on auto options

As TRAFFIC safety professionals, you see what's happening on the streets and highways every day. You become aware of new dangers and new trends before there is time for them to be recorded in statistics.

Also, your hands-on experience gives you insights that may not be widely shared. Sometimes, there are quirky hazards that don't cause enough damage to show up in the statistics, Nevertheless, they are real dangers, and people should be warned about them.

To take advantange of your knowledge, TRAFFIC SAFETY is beginning with this issue a series of surveys. We'll ask you to tell us what you're observing about current issues. We'll tally your answers and report back to the traffic safety community what you're telling us.

Comments Invited

Make your answers as extensive as you like. You can either check off the answers to the questions below and stop or add your comments as well.

You can just tear out this page and send it in. Or, if you have to share your copy of TRAFFIC SAFETY with others, you may want to photocopy this page. Then you can write your comments on the back.

Mail your responses to:

TRAFFIC SAFETY Survey
National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611

This survey is not about the recalls based on problems with the basic operating systems of vehicles. It is about the amenities and options that are added, for better or worse, to a basic transportation unit.

Obviously, some features have more than one effect. Anti-lock brakes protect a driver from running into something in the vehicle's path. At the same time, they make it harder for a following vehicle to brake in time to avoid a rear-end collision.

The question is whether you have any personal knowledge of crashes or injuries in which the following features appeared to be significant:

Vehicle Options	Yes	No
1. Air bags		
2. Seat belts		
3. Anti-lock brakes		
4. Traction control		
5. Four-wheel steering		
6. Cruise control		
7. Power windows		
8. Power locks		
9. Power seats		
10. Telephones		
11. CB radios		
12. Tape decks		
13. Tinted glass		
14. Trailer hitches		
15. Compact spare tires		
16. Emergency tire-changing systems		

States of Intoxication

Where drunk drivers are most common

BY JIM CASTELLI

You're most likely to encounter a drunk driver in Wisconsin, Nebraska, Montana, Minnesota and Texas. And you're most likely to find auto passengers without their safety belts on in the Dakotas, Kentucky and West Virginia. These are some of the findings from a report on risk behavior issued by the U.S. Centers for Disease Control.

The report was based on responses from 32 states and the District of Columbia to a 1987 survey.

Nationally, 3.3 percent of Americans drivers said they had driven after having "too much to drink" at least once in the past month. The figure was highest — 8.8 percent — in Wisconsin.

The high rate of drinking and driving in the state may be related to the fact that Wisconsin also led the nation in "binge drinking" — 29.4 percent of state residents said that had had five or more drinks on one occasion during the past month.

Nationally, 15.3 percent of respondents were binge drinkers. Other states reporting high incidents of drinking and driving were Nebraska (6.6 percent), Montana (6.4 percent), Minnesota (6.2 percent) and Texas (6.1 percent).

Kentucky reported the lowest proportion of the population who drink and drive — 1.3 percent. Other states with low incidence of drinking and driving were Maine, Rhode Island and North Carolina (1.7 percent each); in the District of Columbia, 1.8 percent of the population reported drinking and driving.

Residents of South Dakota (72.2 percent) and North Dakota (69.1 percent) were the most likely to say they "sometimes," "seldom" or "never" wear safety belts, followed by Kentucky (60.2 percent) and West Virginia (59.3 percent).

Nationally, 42.1 percent of respondents said they at least occasionally do not use their safety belts. In Hawaii, in contrast, only seven percent of the population said they sometimes, seldom or never use safety belts. Other jurisdictions reporting low rates of safety belt non-use were North Carolina (13.9 percent), the District of Columbia (14.2 percent), Texas (16.5 percent), Washington (17.0 percent), New Mexico (17.8 percent) and Florida (18.0 percent).

The survey also reported responses for "heavy drinking," 60 or more drinks per month; nationally, 5.6 percent of those responding were heavy drinkers. The accompanying chart shows item-by-item findings for the responding states.

State	Binge Drinking	Heavy Drinking	Drink & Drive	Seat Belt Non-Use
AL	12.5	5.6	2.6	55.8
AZ	17.6	8.0	3.5	43.9
CA	17.8	8.9	3.9	19.1
DC	9.0	4.7	1.8	14.2
FL	15.3	7.0	3.3	18.0
GA	10.6	4.4	2.2	53.0
HA	23.3	9.2	3.5	7.0
ID	15.3	5.0	2.4	42.1
IL	14.1	6.5	3.9	37.8
IN	13.2	3.8	2.4	42.3
KY	8.1	4.2	1.3	60.2
ME	13.6	7.4	1.7	55.3
MD	14.1	8.4	2.8	21.8
MA	20.6	8.8	4.2	45.4
MN	22.2	6.7	6.2	36.5
MO	17.9	6.1	4.2	37.7
MT	22.7	4.5	6.4	49.7
NB	19.4	5.1	6.6	49.6
NH	20.2	10.3	4.9	52.5
NM	6.6	3.9	2.0	17.8
NY	13.2	5.2	2.2	21.7
NC	11.5	4.4	1.7	13.9
ND	22.6	4.3	5.6	69.1
OH	17.0	6.3	3.6	27.1
RI	7.7	6.9	1.7	52.6
SC	11.9	5.6	3.5	52.4
SD	20.6	4.2	5.7	72.2
TN	10.2	4.1	2.6	33.8
TX	21.9	6.9	6.1	16.5
UT	11.0	4.3	2.1	39.2
WA	17.3	6.1	2.8	17.0
WV	13.2	3.7	2.2	59.3
WI	29.4	9.7	8.3	54.0

LIFE RISKY IN THE CLOSED LANE

States seek new ways to protect highway workers

BY THOMAS FRISBIE

41A-B
42
WEST
Peterson Caldwell
Foster Ave
5200 N
Give 'em a
BRAKE
SLOW
DOWN

The "Give 'em a Brake" theme, or its variation, "Lives on the Line," has been adopted by nearly 30 states in an attempt to make work safer for highway employees.

THE WORK zone on a Kansas City expressway looked perfectly safe late last spring, even through traffic was down to one lane. State road workers had set up flashing signs supposed to alert motorists.

The lane in which a crew was repairing concrete was closed off by a long line of cones. A flagman was on hand to keep traffic in the proper lane.

But then a motorist in a hurry showed how risky life can be in the closed lane.

Intending to pass a slower-moving vehicle, the motorist swerved through the barrier of cones. The flagman had no time to get out of the way, and the automobile catapulted his body into a large saw the crew was using to cut concrete.

"The flagman did nothing wrong," said Joseph Mickes, assistant chief engineer for operations at the Missouri Highway and Transportation Department. "It was just a flat-out motorist error" in a place where there was little margin for mistakes. And because more such accidents have been occurring in recent years, highway officials across the country are seeking ways to make the margin of safety just a little bit bigger.

Last year, for example, the National Research Council's Strategic Highway Research Program (SHRP) awarded $25,000 in prizes to 37 engineers who designed new ways to protect highway workers. The competition was held to generate ideas that might save lives, said Damian J. Kulash, SHRP's executive director. "It is a very serious problem. Hardly a year goes by in any of the 50 states in which a state (transportation department) doesn't experience at least one fatality."

Hundreds Die

Although work zones line only a tiny fraction of the nation's miles of roadway, hundreds of people die in them every year, and many more are injured. Work-zone fatalities jumped from 489 in 1982 to 756 in 1988.

According to the Federal Highway Administration, most fatal accidents in work zones involve vehicle collisions with barriers or other fixed objects, and most occur at night, even though traffic is lighter then. During the day, the most frequent type of fatal accident is between vehicles. Accidents involving alcohol account for about the same percentage of work-zone fatalities as they do for all highway fatalities, but tractor- trailer trucks are over-represented in fatal work-zone accidents.

"Jersey barriers" — big, heavy, concrete partitions that separate traffic from construction zones — have been effective in protecting workers on major projects, Kulash said. However, "we don't have anything similar for maintenance zones. It is not practical or possible to erect concrete barriers in maintenance zones. And maintenance by its nature is happening right next to traffic."

Finding new ways to protect workers and motorists traveling near work sites is becoming increasingly important because a smaller and smaller percentage of road work is new construction, where traffic isn't a safety factor, Mickes said.

Existing Roads Dangerous

"Now we are finding that much of the work we are doing is on existing highways. We are being put in a much more dangerous position because we are working right out in traffic. I think the exposure has increased dramatically," he warned.

Work-zone deaths: from 489 in 1982 to 756 in 1988.

Just last September, for example, the chief of a survey party was killed when he was crossing the pavement at a work zone, Mickes said. Some 100 employees of the Missouri Highway and Transportation Department have been killed on the job since 1945. That total doesn't include many more motorists, utility-company workers and employees of private contractors who have been killed or injured, Mickes added.

Part of the problem is that historically, motorists have tended to ignore lowered speed limits in work zones.

"I think there is a lot of fear on the part of our own employees that people are going through these work zones too fast," Mickes said. "Our workers are scared."

To help make work zones safer, Missouri has joined nearly 30 other states in a safety program that uses the slogan: "Give 'em a brake." (Minnesota has adopted the program, too, but uses a different phrase: "Lives on the Line.") The programs encourage motorists to drive carefully through areas where construction or maintenance is underway.

Education Efforts

"It is a public relations campaign that involves public-service announcements on TV and radio," said Rudolph Umbs, chief of the policy development branch of the FHWA's Office of Highway Safety. "States have brochures; they post roadside warning signs that say, 'Give 'em a brake'; they have billboards, and they have newspaper and magazine ads."

State highway departments also are adding new sections to drivers' manuals, circulating special video tapes and undertaking other efforts to publicize the need for caution in work zones. For example, the Virginia Department of Transportation, which adopted the program in 1987, ran public-service newspaper advertisements that featured department employees asking readers to watch out for them when they were on the job. More recently, Delaware, Illinois, Indiana, Maryland and Ohio have adopted the "Give 'em a brake" roadside slogan.

"It's a major emphasis for FHWA," Umbs said. "We certainly have been investing a lot of manpower in this."

A key component of the "Give 'em a brake" campaign, Mickes said, is a crackdown on motorists who violate lowered speed limits in work zones.

"We are working with the highway patrol to bring about increased enforcement of speed zones. They have really stepped up their enforcement. The number of citations in work zones has been phenomenal. In addition, we have retained the services of local police on paid overtime to work our work zones."

New Equipment Concepts

Around the country, new equipment and concepts are helping to make work zones safer. Plastic drums, which provide a larger surface for reflectors, are replacing cones. Plastic barricades have been designed that collapse on impact, rather than bounce into areas where they may injure workers. Steel drums, which can injure motorists, have been outlawed in some states. Truck-mounted attenuators — collapsible aluminum cartridges attached to parked trucks that

COSTS OF CONSTRUCTION

Year	Work-Zone Fatalities	Total Spending Local/State/Federal On Road Construction
1982	489	(in $ Billions) 15.7
1983	602	16.6
1984	703	19.2
1985	678	22.1
1986	691	24.1
1987	701	25.8
1988	756	28.6 (FH[illegible] estimate)

help block work zones — can cushion the impact of vehicles that leave the highway.

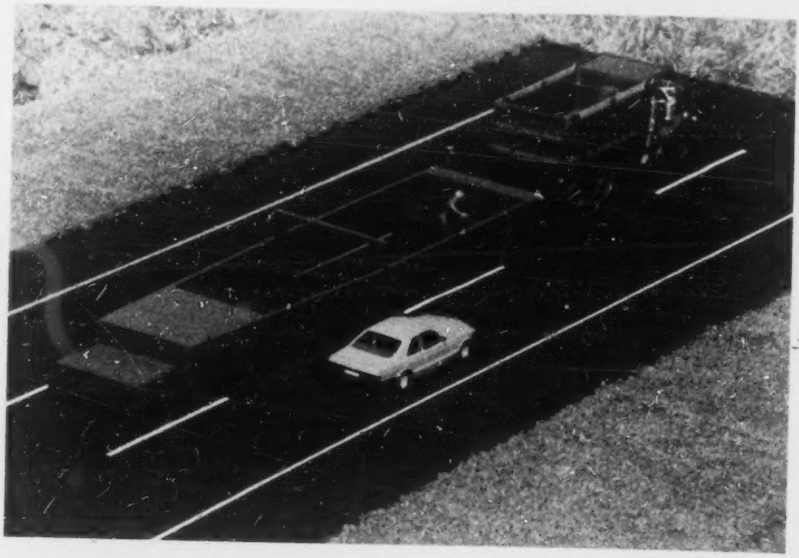
In Montana, the highway department has designed a portable 34-pound, four-foot square warning sign that withstands gusty winds and can be adjusted so that it remains clearly visible even on roads bordered by steep slopes. State highway departments in many cases also are using timed electrical signs to replace human flaggers. In Connecticut, state police have approved the use of blue strobe lights, similar to those on police cars, to alert motorists to work zones. In Texas, computer programs have been devised that help predict the size and duration of traffic backups caused by road work. In Kansas, the University of Kansas Transportation Center last year devoted an entire 20-page quarterly newsletter to the subject of safety in work zones.

Can't Solve Some Problems

Even with all the new efforts under way, however, highway engineers admit there are some safety problems they don't yet know how to resolve.

For example, a massive bridge-rebuilding program in Pennsylvania has demonstrated that there often is no way to meet existing safety standards when setting up barriers at a construction site, said Keith Stonecipher, manager of regulations and control for the Traffic Engineering and Operations Division of the Bureau of Maintenance and Operations in the Pennsylvania Department of Transportation.

Motorists numb to work-zone warning signs.



Invented by James Loumiet, the personnel protection trailer — shown here as a model — is scheduled for construction and testing in early 1990 by Graham-Migletz Enterprises, Inc., of Independence, Mo. It provides a mobile steel barrier to surround highway maintenance workers on the job.

Usually, Jersey barriers or other barricades are aligned at a slight 10-to-1 or 12-to-1 angle from a work zone to the shoulder of a highway. That way, if a car or truck leaves the traffic lanes, it would hit the barrier with a glancing blow instead of smashing straight into it.

But on many jobs, there just isn't room to align the barricades properly because there is a driveway or a cross street at the edge of the work zone, Stonecipher said. As a result, the end of the barrier is exposed, creating a hazard. "There are certain types of restricted work areas where you cannot meet proper end treatments."

Research Now Underway

After Stonecipher encountered numerous work zones in which standards could not be met, he submitted a research proposal to the National Cooperative Highway Research Program (NCHRP). It concluded the problem was significant and turned it into one of its research projects.

As a result, civil engineering professor Hayes Ross is working under contract for the NCHRP to devise new barricade structures for restricted work zones. Ross is head of the structural research division at the Texas Transportation Institute, which is part of Texas A&M University.

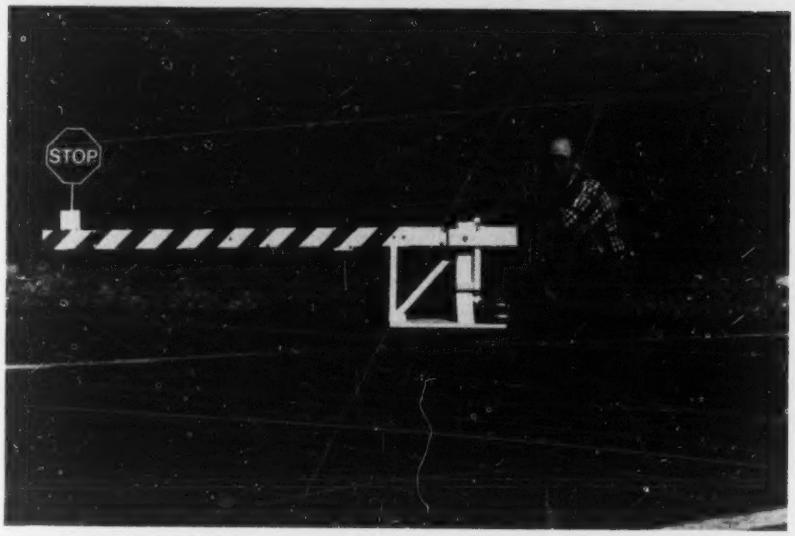
"There are a lot of problems in work zones in trying to maintain traffic and also protect the workers and put the barriers in properly," Ross said. "The typical problem is this. Say you are rehabilitating a bridge in a semi-urban area where there are driveways or a road just adjacent to the work site. You have to provide access to that side street. That means that you can't carry the barrier off the bridge and flare it back as you normally would."

Last summer, Ross's researchers completed Phase I of the $450,000 NCHRP study, which attempted to summarize and classify the problems and provide some preliminary concepts for improvements.

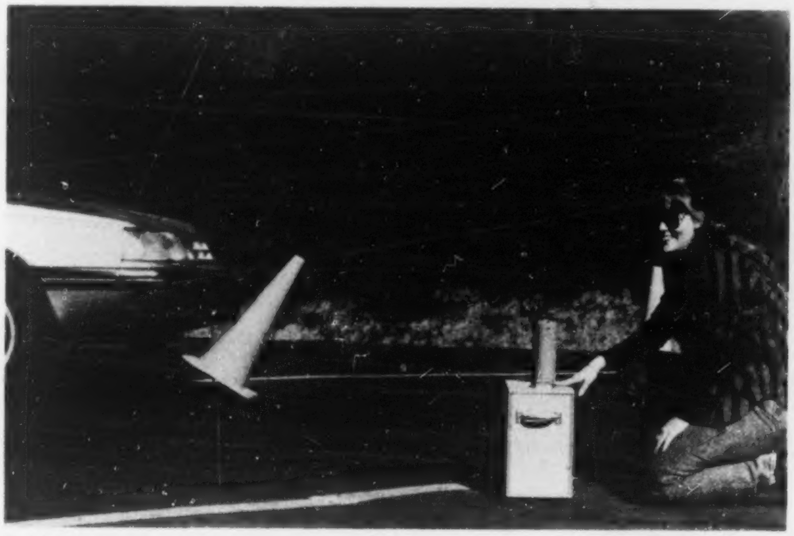
Good Statistics Lacking

"We don't have any good accident statistics; that's one of the problems with most of our roadside safety issues," Ross said. "We don't really have a good handle on the nature of the problem. We know accident statistics in very general terms, but when you try to isolate them according to specific work zone situations, the data are not there. My guess would be the primary type (of accident) would be a nighttime accident where the driver totally disregards all the warning signs and plows through the work zone into the work area."

Research started on better barriers.



Instead of the familiar flagman standing out in traffic as a target, this device regulates work-zone traffic flow from the shoulder of the road. Inventor Robert L. Massey shows how it says STOP when the arm is down. When the arm is lifted, the sign rotates to say SLOW.



Bobbie Bryant, a designer for Graham-Migletz Enterprises, demonstrates an infrared device that sounds an alarm when a vehicle intrudes into the work zone. That gives workers a chance to jump for safety.

In Phase II of the study, researchers hope to develop some new ways to handle barriers in restricted work zones, Ross said.

Other new ideas for making work zones safer might grow out of the SHRP design competition. SHRP has approved a contract to build some of the winning designs and try them out over the course of a few seasons to see how effective they are. "The contest format was chosen to solicit creative ideas from highway workers and managers — those who know the most about the problems and accidents that can occur at highway construction sites," said SHRP's Kulash.

Creative Ideas

One of those "creative ideas" came from Roger Stoughton, senior materials and research engineer at the California Department of Transportation. Stoughton won one of the three top $2,000 prizes for a portable barrier to protect workers.

The portable barrier could be used in temporary work zones where workers now tend to use cones or other lightweight devices that can't physically block a vehicle that leaves a traffic lane, Stoughton said. "We have workers out in the traffic lanes and typically we use traffic cones to close off that lane of traffic while they are working there. The problem is that errant drivers may run right through those cones and into the workers."

On major construction sites, workers can set up concrete barriers or sand-filled drums, Stoughton said. But until now it has been too time-consuming to do that for such minor jobs as patching concrete.

To solve that problem, Stoughton designed a trailer that can be used to transport sand-filled drums quickly from work site to work site. A winch would move the heavy drums from the trailer to the road quickly enough that the system could be used even in places where workers expect to complete the job in a matter of hours.

"The trick is going to be to design this trailer so it will be quick and easy to get that array of sand barrels down," Stoughton said.

Other prize-winning concepts submitted in the contest included a sign that can be quickly and easily installed and moved to alert motorists of construction ahead.

Easily movable signs are a promising notion because work crews often are tempted not to bother with signs if only a small amount of work needs to be done, said Horace Edwards, secretary of transportation in Kansas.

Two $1,000 winners in the contest designed an audible warning mechanism that alerts workers when a vehicle has entered the work area and a siren-and-rumble-strip device that warns motorists that their cars have left the main roadway.

In tight spaces some problems defy solution.

Now, noise from maintenance equipment and nearby traffic often masks the sound that could warn of an impending accident.

"I think we heard from a lot of people who have day-to-day, hands-on exposure to the problem who usually don't get a channel for some of their thoughts to be heard in terms of a research program," Kulash said.

"We had a very vigorous response to the design competition itself, and many of the people we heard from were people who work in this side of the business," Kulash added. "We had some very useful suggestions."

LOOKING WITHOUT SEEING

What professionals should know about drivers' vision

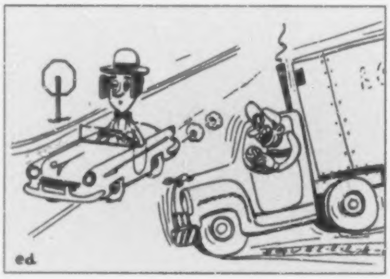
BY RAYMOND SCHUESSLER

DRIVERS need good eyes to estimate automobile speeds, to see potential danger from the sides and to judge distances. In short, to drive well they must see well.

The factor of vision has scarcely been touched in the search for the causes and prevention of crashes. Research may someday prove that vision is the key factor in managing a car, especially at high speeds.

For instance, when traveling at 60 miles per hour how well can they see? The road seems to stretch ahead perfectly clear. They spot cars, trucks, curves and bridges without difficulty.

But what else do they see? At that speed, a narrow strip of road is just about all. Here is a simple test: At a crossroad is a post bearing half a dozen names of towns and villages, one above the other. How many of the names can be read at 60 miles per hour? Only a superior eye can grab the top one. The others are a mere blur. At the next crossing drop down to 40 and you can read at least two of the names. At 30 you can take in three or four.



Cartoons: American Optometric Association.

Having 20/20 vision is not good enough.

According to Professor E. Llewellyn Thomas, a biologist and engineer at the University of Toronto who recorded eye fixation and movements with a new camera, everyone's eyes work like this:

- A driver's eyes dart about rapidly in search of information, flicking to the curb, then to the edge of other cars and to the spaces between cars. if the eye cannot identify some object quickly, it jumps back again.
- Although only a small fraction of the entire visual field is seen in good focus, the eye is aware of a wide field. But detailed information is gathered only in a tiny area in the retina called the *fovea*, no larger than a head of a pin. Thus, the eye must swivel to catch details.

More than 20/20

Just being able to see a Snellen Chart and its rows of $\frac{3}{8}$-inch letters at 20 feet is *visual acuity*. It means a 20/20 driver can see a hazard at 280 feet; a 20/40 driver at 112 feet and a 20/50 driver at 90 feet. (This means a 20/50 driver going 60 will be about 200 feet beyond the hazard when his car stops.)

But having 20/20 vision is not enough. Beyond seeing straight ahead, a driver must have good *peripheral vision* — the ability to see to either side while looking straight ahead. If you are limited in such vision, you can see only through a tunnel straight ahead, which is a danger at intersections.

Then there is *depth perception*, which allows you to tell the distance between your car and other objects. Lacking such ability, you may not be able to tell the distance from an oncoming car while passing.

During the critical accident-prone dark hours, *night vision* is vital. This means you must see well in poor light, see against glare and recover quickly when blinded by glare. This ability diminishes with age.

Twilight Threat

It is possible to see perfectly in the daytime but have trouble seeing at night. That's because eyes have two separate mechanisms: one for daylight and the other for night viewing. When twilight approaches, the eyes make a slow transition from one set of muscles to the other. This takes time and that's why twilight is the most dangerous time for motorists. During this period when light is fading, objects seem farther away than they are, and the lessening light seems to blend objects and background into a blob.

About three-fourths of people with perfectly normal vision in daylight become near-sighted in dim light, that's according to the researches of Herschel W. Leibowitz at Pennsylvania State University and D. Alfred Owens of the Massachusetts Institute of Technology.

Short Focus in Dark

Investigators had long assumed that eyes focus in total darkness at infinity. But Leibowitz and Owens found that there is a tendency of the eyes to relax when there is limited visual stimulation. Most subjects, they found, focus at a point no more than six feet away when driving at night. More distant objects will all be somewhat blurred. Yet, drivers do not reduce their speed at night. Perhaps this is why so many pedestrians, cyclists and disabled cars are struck at night.

Special prescription glasses were suggested as a solution. Most of all, Owens and Leibowitz proposed that drivers be screened for night as well as daytime visual ability.

Everyone develops vision changes with age, but most of these problems can be corrected. The worst problem is not knowing that you have a defect. Here are some of the signs that eyes may need checking:

- Is it difficult for you to determine whether the car ahead is moving towards you or just stopped?
- Do you have trouble adjusting to light or dark streets?
- When you are passing signs do you have enough time to read them?
- Do objects seem to appear suddenly from the side as you drive?

Eye specialists can correct many visual shortcomings. Those they can't cure can be compensated for by the driver. Anyone with a narrow field of vision, for instance, should keep turning his head from right to left when approaching intersections.

Drivers with poor depth perception must never pass a car when a car is coming from the opposite direction because they cannot perceive the distance between these cars.

If glare is bothersome, the driver must avoid looking into oncoming headlights by watching the right side of the road.

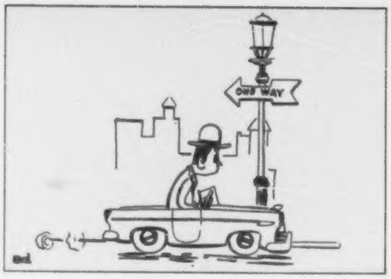
If your night vision is poor, drive slower or don't drive at all after dark.

More Rules

Here are some tips that traffic safety professionals should pass along to drivers whenever the opportunity presents itself:

Slowly shifting eye muscles make twilight the most dangerous time.

- Keep the windshield clean. Dirt can warp light rays and distort objects ahead. If your windshield has been cleaned with a chemical solution, it may cloud when the sun hits it at a certain angle. Water is best to clean windshields.
- Learn to use the sun visor judiciously to combat sunlight. Excessive sunlight not only obscures vision, it tires your eyes. Experiment with the visor and learn how it can be adjusted to obscure the sun from almost every angle.
- Sunglasses can lessen the strain of sunlight (gray and green lenses are best) and permit your eyes to adjust to quick light changes of tree-side, shadows or tunnels.
- Never drive if you are ill; a high fever will slow down visual reflexes. Medicines can affect your vision by causing dizziness and blurring. Anytime you get a prescription ask the doctor and druggist about possible effect on driving.



- Above all, use your eyes to their fullest extent. Too many drivers just stare out the window. When you drive you must use your eyes to search the entire scene so you can anticipate dangers and devise escape routes. Then you will never have to say; "I didn't see him coming!"

STATES' EXPERIENCE WITH INEXPERIENCED DRIVERS

Update on status of provisional licensing

BY JERRY TANNAHILL
AND MICHAEL SMITH

FOR YOUNG persons under age 25, traumatic injury constitutes the leading cause of death, and traffic crashes are the leading cause of traumatic injury. In 1987, young persons ages 15-24 represented 16 percent of the population and 31 percent of all traffic fatalities.

Authorities attribute the driving problems of young drivers to:

1. Driving inexperience and lack of adequate driving skills.
2. Excessive driving during high-risk hours, especially night-time.
3. Risk-taking.
4. Poor driving judgment and decision making.

After initial licensing, it takes considerable driving experience for young drivers to achieve dependable driving know-how, skill and judgment. Ways must be found to integrate novice drivers, regardless of age, into the traffic environment gradually, in a manner that enables them to gain knowledge, skill and experience over a period of time under controlled conditions.

In particular, their exposure to high-risk situations (such as night-time driving) should be reduced until they have learned how to operate a motor vehicle safely. Often, the way they learn driving skills can be enhanced through driving practice supervised by parents or guardians.

The concept of treating young novice drivers differently than the general driving population is not new.

Since the mid-1970s, Michael Smith, research psychologist, research and development, and Jerry Tannahill, highway safety specialist, traffic safety programs, National Highway Traffic Safety Administration (NHTSA), have worked closely with federal, state and private sector traffic-safety researchers and officials to reduce the involvement of young drivers in traffic crashes.

This article is a summary of the recently published report entitled, An Improved Driver Entry System for Young Novice Drivers. *The report was prepared by NHTSA and the American Association of Motor Vehicle Administrators (AAMVA) to be a national guideline for the licensing of young novice drivers.*

Driving twice as deadly for young drivers.

The *Uniform Vehicle Code*, first published in 1926, as a specimen set of motor vehicle laws, designed and advanced as a comprehensive guide for state motor vehicle and traffic laws, has provided since 1938:

"Whenever the Department issues an original license to a person under the age of 21 years such license shall be designated and clearly marked as a 'provisional license.' Upon renewal, the Department may for reasonable cause as shown by its records designate the renewal of the license as provisional; otherwise a license in usual form shall be issued subject to other provisions of this chapter."

In 1977, the National Highway Traffic Safety Administration (NHTSA) developed a provisional driver-licensing program: *Development of a Model System for Provisional (Graduated) Licensing of Novice Drivers: Final Report.*

This program was based on a review of federal and state research activities and state practices. Proposals reflected the state of the art and were scientifically supported. A review by expert state driver-licensing and control officials and researchers established the final components of the program.

Crash Rate Reduced

The Maryland Department of Motor Vehicles, under a 1977 demonstration project funded by NHTSA, implemented and evaluated a portion of this provisional-licensing program. The Maryland project final report, dated December, 1983, showed a five percent reduction in crashes and a 10 percent reduction in traffic convictions for 16- and 17-year-old provisionally licensed drivers. It recommended requiring novice drivers who have completed a high school driver-education program to take another "advanced" driver-training program prior to full licensing. Such "advanced" driver training, though, probably would benefit only those students who had developed the necessary basic driving skills through extensive behind-the-wheel driving experience.

A California Department of Motor Vehicles' provisional-driver licensing program was implemented on January 1, 1983. It was reported recently that their provisional-licensing system reduced by 5.3 percent the rate of crashes involving 15- to 17-year-old drivers. The state legislature was advised that the provisional-licensing program be continued and that other features, such as a night-time restriction, be considered to enhance the program.

The NHTSA and the American Association of Motor Vehicle Administrators (AAMVA), recently completed the development of recommendations for an improved driver-licensing program for young drivers. This activity was carried out by the AAMVA Driver Licensing and Driver Control Committee and culminated with "An Improved Driver Entry System for Young Novice Drivers," a part of the AAMVA/NHTSA *Guidelines for Motor Vehicle Administrators*, a series of publications.

The proposed new driver entry system will ease young novice drivers into the driving environment under more controlled conditions by:

1. Increasing the amount of their supervised behind-the-wheel driving practice.
2. Increasing their exposure to progressively more difficult driving experiences under safer conditions.
3. Requiring novice drivers to earn their full driving privilege by demonstrating crash-free and conviction-free driving performance prior to being fully licensed.

New System

The new driver entry system includes the following major features:

- Learner's permit required for a specified period during the learning phase for behind-the-wheel training (90 days to one year) and successful completion (optional) of a driver-education course.
- Parent-supervised basic driving practice and advanced practice sessions during high-risk (night-time) hours.
- Youth-oriented and prompt driver improvement actions.
- Night-time restriction as a licensing phase (*e.g.*, 10:00 p.m. to 6:00 a.m.) and a method of taking remedial action.
- Establishment of age 21 as minimum for sale, purchase and use of alcoholic beverages; and lower legal blood alcohol concentration (BAC) limits (*e.g.*, zero BAC) for under-age drivers.
- Mandatory safety belt usage by all occupants of a motor vehicle being operated by a provisionally licensed driver.
- Lack of crashes or convictions for a specified time (*e.g.*, six months to one year) as evidence of safe driving habits.
- Distinct provisional license (*e.g.*, differently colored photo background than the regular driver's license).

Six states provide material to assist parents in the conduct of behind-the-wheel driving practice with young drivers. For example, the California provisional-licensing program has a publication designed for parents and/or guardians. It describes what the student is expected to learn. Its purpose is to actively involve parents and/or guardians in a teenager's learning-to-drive process. Before the applicant takes the driving test, the parent, guardian, spouse or licensed driving instructor must sign the minor's permit certifying that the points contained in the publication been have covered.

California reports 5.3 percent fewer crashes for ages 15 through 17.

A youth-oriented driver-improvement program assures that quick action is taken before the young driver becomes a problem driver. For example, California now imposes a one-month driving restriction after the second traffic conviction or a responsible crash within 12 months. During this 30-day period, the solo driving privilege is taken away and the novice driver must be accompanied whenever he or she drives by a parent, spouse, guardian or licensed driver who's at least 25 years old.

A recent Insurance Institute for Highway Safety study of states with night-time curfews found a reduction in crashes involving 16- year-old drivers. The following eight states have night-time restrictions:

- Idaho — Daytime only;
- Illinois — 11:00 p.m. to 6:00 a.m.;
- Louisiana — 11:00 p.m. to 5:00 a.m.;
- Maryland — 12:00 a.m. to 6:00 a.m.;
- Massachusetts — 1:00 a.m. to 5:00 a.m.;
- New Jersey — Night-time;
- New York — 9:00 p.m. to 5:00 a.m.;
- Pennsylvania — 12:00 a.m. to 5:00 a.m.

Alcohol Inexperience

Young drivers' inexperience with alcohol and with driving, and their greater exposure to more hazardous driving situations, indicate that a lower BAC level is appropriate for a provisional-license program. Since all states have established age 21 as a minimum age for the sale, purchase and use of alcoholic beverages, a zero BAC limit for under-age drivers is appropriate. In North Carolina and Wisconsin, it is illegal for operators under age 18 to drive with any alco-

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Most states now restrict novice drivers one way or another.

hol in their blood. Maine and Maryland have lowered the BAC for young drivers to .02 percent; Rhode Island requires .04 percent, and California and New Mexico .05 percent. Iowa teenagers whose alcohol levels are higher than allowed by law lose their driving privileges for six months, or until they are 19 years old, whichever is longer.

Several studies have shown that young drivers and their passengers use safety belts less than more experienced drivers. All occupants of a motor vehicle being driven by a provisionally licensed driver should be required to use their safety belts. The original New York safety-belt law, which required all learner and probationary drivers to use safety belts, was the first to apply to others than infants. Currently, only five states — California, Montana, Nevada, Washington and Wisconsin — require all occupants of a motor vehicle to use safety belts.

Finally, results from the Ontario Probationary Driver System, which requires two years of driving without a suspension, show that there were nine percent fewer crashes and 14 percent fewer offenses for the probationary drivers. (Probationary drivers are allowed fewer than half the points needed for regular drivers to be suspended.) In addition, the crash rate was down seven percent and the offense rate was down 11 percent for male drivers under 20 years of age.

Maryland reduces crashes by five percent.

NEW DRIVER ENTRY SYSTEM FEATURES I

STATE	Learner Required	Prov. License	Night Restr	Manual & Test	Parent Part.	Lower BAC	Model DI Prog
Alabama							
Alaska	yes						
Arizona	yes						
Arkansas	yes						
California	yes	yes		M	yes	(.05)	yes
Colorado	yes	yes					
Connecticut	yes			M			
Delaware	yes						
District of Columbia	yes						
Florida	yes	Considering Program					
Georgia	yes						
Hawaii	yes						
Idaho			Daytime				
Illinois	yes	yes	11-6	M	yes		yes
Indiana	yes	yes					yes
Iowa	yes	Considering Program					yes
Kansas	yes						
Kentucky	yes						
Louisiana	yes		11-5				
Maine	yes					(.02)	
Maryland	yes	yes	12-6	M	yes	(.02)	
Massachusetts	yes		1-4		yes		
Michigan	yes						yes
Minnesota	yes	yes					yes
Mississippi	yes						
Missouri	yes						
Montana		Considering Program					
Nebraska							
Nevada							
New Hampshire		Considering Program					
New Jersey	yes		night	M			
New Mexico	yes					(.05)	
New York	yes		9-5				
North Carolina	yes					(.00)	
North Dakota							
Ohio	yes						
Oklahoma			New Law				
Oregon		Considering Program					
Pennsylvania	yes	yes	12-5				
Rhode Island		Considering Program				(.04)	
South Carolina		Considering Program					
South Dakota							
Tennessee							
Texas	yes						
Utah	yes						
Vermont	yes	yes			yes		yes
Virginia	yes						
Washington	yes						
West Virginia	yes	yes					
Wisconsin	yes				yes	(.00)	
Wyoming	yes						yes

Status as of January 1, 1989

Currently, 33 states have placed some form of restriction on young drivers, and 26 states require completion of driver education prior to licensing before age 18. While many states are already implementing some features of the new driver-licensing entry system, none is implementing a major portion of the features proposed. In light of the Maryland and California findings, there is a need for states to review their licensing programs.

What To Do

Because several evaluations have documented the crash reduction impact of provisional licensing, state traffic-safety and driver-licensing officials should seriously consider implementing a young driver provisional-licensing system.

Definitions

Learner's Permit Required = A learner's permit is required of all new drivers prior to issuance of a provisional or regular driver's license. Such a requirement can provide the applicant with the supervised daytime driving experience needed to develop basic behind-the-wheel skills.

Provisional Driver's License = A provisional or similar type driver's license issued to new young drivers prior to full licensing.

Night-time Restriction = A night-time restriction is applied to all new drivers (or to ages 15 and 16) to provide the applicant with a period of supervised driving practice during the hours of greatest hazard.

Manual and Test = State driver's license manual or supplemental manual (M) and the knowledge test (T) tailored for young or novice drivers.

Parent Participation = State has a program and materials that encourage the parent/guardian, may even be required, to provide supervised behind-the-wheel driving practice to their young novice driver.

Lower BAC = State has established a lower BAC (less than 0.10) for drivers under the state's legal drinking age (age 21), which means loss of license for one year or until age 21, whichever comes sooner.

Model Driver Improvement (DI) Program = State has a driver control program that provides for quicker intervention with young novice drivers than with drivers in general.

Mandatory Safety Belt Use = State law requires all occupants of a motor vehicle being driven by a provisionally or other licensed driver to be wearing safety belts.

Minor Driver License = State minor (under age 21) driver's license different from adult to facilitate enforcement of drinking-age laws.

Clean Record = Demonstrated period of safe-driving performance prior to issuance of unrestricted or regular state driver's license.

Driver Education (DE) Required = Successful completion of a driver education program required prior to issuance of regular state driver's license to young drivers under specified age.

Parent Consent = Parent/guardian consent required prior to licensing an unemancipated minor under age 18. Ages in parenthesis indicate a different age of majority for licensing purposes.

NEW DRIVER ENTRY SYSTEM FEATURES II

STATE	Mandatory Safety Blt	Minor License	Clean Record	Driver Ed Rqd	Parent Consent
Alabama					
Alaska					yes
Arizona					yes
Arkansas					yes
California	yes	yes	yes	18	yes
Colorado		yes			yes
Connecticut				18	yes
Delaware		yes		18	yes
District of Columbia					yes
Florida		yes			yes
Georgia		yes			yes
Hawaii		yes			(20)
Idaho		yes			yes
Illinois		yes		18	yes
Indiana		yes		18	yes
Iowa				18	yes
Kansas		yes			(16)
Kentucky					yes
Louisiana		yes		17	(21)
Maine		yes		17	yes
Maryland		yes	yes	18	(21)
Massachusetts		yes		18	yes
Michigan				18	(21)
Minnesota		yes		18	yes
Mississippi		yes			(17)
Missouri					
Montana	yes			16	yes
Nebraska					
Nevada	yes	yes			yes
New Hampshire				18	
New Jersey					
New Mexico		yes		16	yes
New York		yes		18	yes
North Carolina				18	yes
North Dakota					yes
Ohio		yes		18	yes
Oklahoma			yes		(16)
Oregon		yes			yes
Pennsylvania		yes		18	yes
Rhode Island		yes		18	yes
South Carolina		yes			(21)
South Dakota					yes
Tennessee					yes
Texas		yes		18	yes
Utah		yes		18	yes
Vermont		yes			yes
Virginia				19	yes
Washington	yes	yes		18	yes
West Virginia		yes		18	yes
Wisconsin	yes			18	yes
Wyoming		yes			yes

Status as of January 1, 1989

OSHA Tightens Safety Belts

BY JIM CASTELLI

Samuel Skinner, U.S. Secretary of Transportation.

Jerry Scannell, U.S. Assistant Secretary of Labor for Occupational Safety and Health Administration.

THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) is preparing regulations on seat-belt use on the job. Secretary of Labor Elizabeth Dole and OSHA Administrator Gerard F. Scannell discussed the upcoming regulations in addresses at the National Safety Council annual Congress.

"Seat belts most definitely save lives," Dole said. "That's true for the general motoring public, and it's equally true on the job. On-the-job motor vehicle crashes, in both on-road and off-road vehicles, caused approximately 37.5 percent of traumatic work-related fatalities in 1988."

"Not long after arriving at the Labor Department," Dole said, "I directed OSHA to begin drafting a standard to address this problem. And we will soon propose a regulation requiring seat-belts or similar restraints to be used in vehicles on the job. I have no doubt that this simple requirement will greatly reduce occupational injuries and fatalities."

Scannell said, "We are moving swiftly to develop a proposal for a motor vehicle safety standard that would cover all industries — construction, general industry, maritime and agriculture.

"I am convinced that effective driver training coupled with a requirement for everyone in the vehicle to use seat belts can cut on-the-job fatalities and injuries by 30 percent or more.

"Obviously, such a standard, covering vehicles used occupationally both on the highways and on private property, including construction worksites, could make a major contribution to improved job safety in America."

Safer Vans and Trucks

Transportation Secretary Samuel Skinner has announced new regulations requiring light trucks and vans to meet the same safety standards as passenger cars. The department proposed requiring stronger roofs for light trucks and minivans beginning with the 1992 models. It also issued a final rule requiring lap-shoulder belts for rear seats in light trucks and minivans for the 1992 models. Front seat belts are already required.

New Goals

As part of President Bush's "Management by Objectives" policy, each federal department is developing goals and milestones toward those goals for submission to the White House. Secretary Skinner has identified three objectives for the U.S. DOT: to improve overall transportation safety and security, to keep the National Airspace System modernization moving forward, and to develop a

National Transportation Policy statement by 1990.

DOT is working toward lowering motor vehicle crash fatality rates from its 1988 level of 2.46 and has established a goal of 2.2 deaths per 100 million vehicles miles traveled by 1992.

Secretary Skinner asked the National Safety Council to help with new safety initiatives now under development, including reinforcement of support for citizen groups, designated driver programs, and driver safety education in schools and workplaces.

He also said that drug testing is an important part of DOT's effort to lower the incidence of human error accidents. Drug testing of more than four million employees in safety- and security-related jobs in all major modes of transportation is scheduled to start in the near future. "Although our rules are undergoing challenges in the courts, I fully intend to proceed with their implementation under the law," he said.

Speedy Rules

Jerry Curry, the nominee for head of the National Highway Traffic Safety Administration (NHTSA), told senators at his confirmation hearing that he would speed up the agency's rule-making. Specifically, he promised that if confirmed he would push NHTSA to complete its decade-long consideration of an improved side-impact standard for passenger cars by next summer. Curry said he would set a goal of 18 months for the agency to approve or reject safety recommendations. The average time is now two years. But he opposed legislative time limits on safety rules.

NHTSA says it will begin enforcing stiffer regulations against "gray-market" auto imports on January 31. The rules, mandated by Congress last year, will affect about 2,100 imported cars a year that were not designed to meet U.S. safety standards. Only registered importers or someone with whom the importer has a contract will be able to import a "gray-market" car. They would then be required to bring the car up to U.S. standards. Domestic and foreign car dealers asked for the rule. They said they were blamed when the second and third buyers of such cars found the vehicles did not meet U.S. standards.

Rural Traffic Deaths

A study conducted for the National Highway Traffic Safety Administration found that traffic deaths increased by an average of 15 percent during the last two years on rural portions of interstate highways in states that raised the speed limit from 55 to 65 miles per hour.

The study, conducted by researchers from Harvard and Carnegie Mellon universities, found that the increase in traffic deaths was even higher in some states — rural interstate deaths increased 53.7 percent in Washington, 45.4 percent in Arizona, 43.3 percent in Iowa, 42.3 percent in Minnesota and 41.2 percent in Mississippi.

The rural interstate death rate drop actually fell in some states that had adopted the higher speed limit: Indiana fatalities declined 66.3 percent and Montana, 33.2 percent. The study said the reduction in fatalities may be traced in part to tougher police enforcement and seat belt laws.

Forty states have adopted the 65 mph limit since Congress enacted legislation in 1987 allowing speed limit increases on portions interstates that pass through areas with populations of 50,000 people or less. Connecticut, Maryland, Massachusetts, New Jersey, New York, Pennsylvania and Rhode Island did not raise their speed limits. Alaska and Delaware had no eligible rural interstate highways where they could raise the limit, and Hawaii had only five miles of interstates.

Enforcement

Secretary Skinner has recently written to the governors of all 50 states to enlist their participation in a nationwide campaign featuring speed as a driving safety issue. In a keynote address at the National Safety Council Congress and Exposition in Chicago, he said, "We want to see greater compliance with posted speed limits from motorists on all our roadways and this requires meaningful speeding laws with appropriate sanctions, effective enforcement and adjudication, support from elected officials and police agencies and commitment from our outstanding public and private safety organizations."

Council Recommendations

Safety must be a cornerstone of any national transportation policy, the National Safety Council told the Department of Transportation at hearings on the development of a proposed policy. Transportation Secretary Skinner has promised to announce such a policy in early 1990.

Richard L. Tippie, director of transportation safety for the National Safety Council, made these specific recommendations:

- Government spending on major capital improvements to meet the needs of increased reverse commuting from city to suburb and between suburbs.
- Expanded mass transit systems and better car/van pooling and express lanes for high-occupancy vehicles.
- Continuing and expanded highway construction, re-

construction and maintenance and increasing emphasis on traffic engineering, enforcement and education.

- The Highway Trust Fund should be continued and maintained as the primary source of federal highway financing with no restrictions that impede access to authorized funds.
- The State and Community Federal Highway Safety Program should be continued and funding increased for programs for alcohol- and other impaired drivers, passive and active restraint use, increased law enforcement on the highways and increased training for law enforcement personnel, improved traffic records systems, programs for the elderly and pedestrian safety efforts.
- Adult drivers must be motivated to take defensive driving courses.

Find Leverage

State officials told a Senate hearing that they would welcome federal incentives for toughening their highway safety laws, but oppose federal penalties for not following federal guidelines.

The officials were commenting on a proposed law introduced by Sen. John Chafee (R, R.I.). The bill would provide federal grants to help states implement their safety programs. But it would also withhold up to 10 percent of a state's federal highway funds unless it required the use of seat belts in automobiles and helmets on motorcycles.

The National Conference of State Legislatures and the National Association of Governors' Highway Safety Representatives opposed the penalties. Motorcycle rider groups also oppose them. Public health groups, physicians and the insurance industry support Chafee's proposal.

Chafee said nearly 50,000 people are killed on the highways each year. The National Highway Traffic Safety Administration estimates 20,000 lives have been saved over the last five years because of motorcycle helmets and automobile safety belts.

Check Points

The U.S. Supreme Court has agreed to take up a case testing the constitutionality of police sobriety checkpoints. The use of such checkpoints is widespread across the nation, and appeals in 22 states have held them to be constitutional. Courts in an additional six states — including Michigan — have held them to be a violation of the Fourth Amendment.

Safety Coalition

Insurance companies and consumer advocates, two groups often at odds, have formed a coalition to work for lower speed limits and other auto safety measures. The new group, Advocates for Highway and Auto Safety, will be financed almost entirely by insurance companies, which will be able to obtain a seat on the coalition's board of directors with a contribution of at least $100,000.

Joan Claybrook, president of the consumers' group Public Citizen and a co-chairwoman of the coalition's board, pointed out that two-thirds of the cost of auto insurance results from property damage and injuries, giving insurers and safety advocates reason to unite.

The coalition will work at the state level for mandatory seat belt, child safety seat and motorcycle helmet use. It will also address such issues as high incident locations, pedestrian hazard area and auto theft.

In Washington, the group will focus on the reauthorization bill for the National Highway Traffic Safety Administration. The bill, which has passed the Senate, would authorize upgrading side impact standards and extending federal motor vehicle safety standards to multipurpose vehicles and light trucks.

"About 6,000 lives could be saved each year if key motor vehicle standards (such as these) are adopted that have been pending in the Department of Transportation for the last eight years," Claybrook said, quoting NHTSA estimates. "As many as 1,500 lives could be saved with modest improvements in state highway safety laws."

Another of the group's goal, she said, will be a return to 55 mph speed limits on rural highways, which the NHTSA says could save 350 lives each year. "The speed limit is our greatest challenge in the future," she said.

The seven major insurance companies that have joined the coalition account for 40 percent of the nation's auto insurance business.

WELCOME ATTENDEES AND GUESTS
1989 NATIONAL SAFETY COUNCIL
CONGRESS AND EXPOSITION
GREEN CROSS FOR SAFETY

SAFETY IN THE HEARTS AND MINDS OF THE PUBLIC

Highlights of the 77th Safety Congress

BY GAIL MANSFIELD

STOP
HAZMAT
CHECK
AHEAD
DANGER
DANGER

Reflective safety signs glimmer in the exposition hall.

MORE THAN 14,000 safety and health professionals gathered at the Council's 77th annual Congress & Exposition, held Oct. 29 - Nov. 2 in Chicago. This year's Congress featured a different keynote speaker each day, the largest exposition ever and a very special Congress Night Out.

Opening session

Crowds packed the Arie Crown Theatre for Monday morning's opening session. In his speech, Council President T.C. Gilchrest encouraged safety and health professionals to make safety "competitive" in the '90s. "Safety will compete with other issues for top management attention, for the attention of our legislators and for the hearts and and minds of the general public," he said. "We need to market and promote safety and health better in order to save lives."

Gilchrest discussed the many factors changing the U.S. work force: an

Elizabeth Dole, U.S. Secretary of Labor, with T.C. Gilchrest, president of the National Safety Council.

increase in illiterate employees, poor health and fitness among workers, increased substance abuse and emotional health problems, growing numbers of women, minorities and temporary workers. "We need to gear our safety education programs to meet these changes," he said.

He discussed the importance of keeping safety and health issues in the eye of legislators and the general public. Gilchrest urged each member of the audience to work toward making safety competitive.

"Apathy, inertia and misunderstanding are our worst enemies, whether we're battling drugs, illiteracy or public perceptions. The mission of safety and health requires energy and commitment. It's the only way to bring the deaths, injury and illness numbers down."

David P. Curley, chairman of the Council's Board of Directors, addressed the subject of risk. "As safety and health professionals, we are in the business of risk," he said.

Curley suggested that the goal of safety and health workers is to "strike a balance between acceptable risks, costs and benefits . . . our role is to bring sense and reason to the public's perception of risks. The National Safety Council is moving forward trying to build a framework of risk understanding for leaders in industry, government, labor, transportation, education and community service." He encouraged those present to "join us in exploring the risks that cause accidents and steal productive lives from this country."

Elizabeth Dole

U.S. Secretary of Labor Elizabeth Dole was the opening session's featured speaker. Dole provided an update on the Department of Labor's activities, reporting that she has proposed an increase of $15 million dollars for the OSHA enforcement budget, and that OSHA is developing a set of voluntary guidelines to address the problem of repetitive-movement injuries. She also outlined the department's new policies and standards addressing the trenching/excavation industry, the mining industry, work-related motor vehicle accidents and substance abuse in the workplace.

"Making safety a top priority of both the public and private sectors, moving aggressively to prevent safety hazards before they occur; maximizing the effectiveness of our rule-making and enforcement authority; fighting the battle against drugs: these are the policies of the Department of Labor as we enter the last decade of the 20th century. The policies can't succeed without your help . . . working together, we will meet that challenge, and we will ensure that Americans at work are Americans who are safe."

Opening session entertainment consisted of a rousing orchestra and choral group opening and close, plus a state-of-the-art multimedia presentation.

OSHA Goals

Gerard F. Scannell, newly named head of OSHA, served as Tuesday's keynote speaker. Scannell discussed issues high on OSHA's agenda: strict and consistent enforcement, on-the-job motor vehicle safety, record-keeping, ergonomics, AIDS and other bloodborne diseases, indoor air quality, hazard communication, workplace substance abuse and administrative reform.

Wednesday's keynoter was U.S. Secretary of Transportation Samuel Skinner. Skinner discussed the Department of Transportation's goals: greater compliance with posted speed limits, reconstructing America's crumbling highway system, improved vehicle safety standards, drug testing within the department, and improved aviation safety and security.

Skinner also announced two new actions by the National Highway Safety Administration. The actions apply to light trucks, multipurpose vehicles and convertible passenger cars. The first action, now a rule, requires rear-seat lap/shoulder belts in any of these vehicles manufactured after Sept. 1, 1991. The second action, if passed, would require roof crush protection on 1992 multipurpose passenger vehicles and trucks with a gross vehicle weight rating of 10,000 pounds or less.

Addressing Major Issues

Twenty-four blockbuster sessions and more than 125 specialty sessions covered a variety of issues relating to workplace, home, traffic, public and school safety.

Traffic and motor fleet topics were addressed in these sessions:

- "Into the '90s with Occupant Protection: An Update";
- "Overlooking the Number One Cause of Dollar and Productivity Losses: Focusing on a Total Safety and Health Program" (costs of motor vehicle accidents;
- "Air Brakes — What Are the Latest Trends Since Standard 121?";
- "Through the Years . . . Still the First Name in Driver Improvement"

(25th anniversary of the Defensive Driving Course);

- "Work-Related Motor Vehicle Injury Costs — The Bottom Line";
- "Accident Investigation — The Importance of Collecting Information and Preserving Evidence" (school bus accidents);
- "How Should Safety Influence Specifications?";
- "Current Changes in DOT Regulations";
- "How Does the Media Approach an Accident Scene and How Do You Handle It?";
- "Programs to Counter Productivity and Economic Losses";
- "How to Manage the High-Risk Employee";
- "New Commercial Driver's License and Worker's Compensation Critique";
- "Minimum Operating Time to Qualify New Operators;"
- "Directions for Traffic and Transportation: Tomorrow and the Future";
- "Safety Survey/Inspection and Audits";
- "Driver Shortage — Meeting the Challenge";
- "Safe Transportation of Disabled Passengers"; and
- "Hazardous Cargo Briefing and Discussion."

Record-Setting Exposition

At the 1989 Exposition, more than 500 firms exhibited their products, programs and services at 1,081 booths — more exhibits than at any previous Congress. Materials covered at the Exposition included: administrative aids, incentive and award plans, computer services, consulting services, and educational and training aids. Other products were: fall protection, fire protection and security, hazardous materials controls, health risk controls, motor transportation education and safety, personal protection, production safety and safety signage.

Night Out a Success

Tuesday night was Congress Night Out, the official social evening of Congress week. Attendees enjoyed two shows featuring country singer Crystal Gayle and comedian Robert Klein. Proceeds benefited the Foundation for Safety and Health, a fundraising arm of the Council which provides grants for safety and health programs developed both within and outside of the Council.

EVENTS

Drug Awareness

JANUARY

Hazardous Materials Transportation Training — Jan. 9-10, Cleveland; Jan. 23-24, Caspar, Wyo. — National Safety Council, 444 N. Michigan Ave., Chicago 60611 (312) 527-4800, extension 8407.

Forklift Truck Operators Instructor Course — Jan. 17, Jamesburg, N.J. — Marlene J. Schmidt, Occupational Safety Conference, New Jersey Safety Council, 6 Commerce Dr., Cranford, NJ 07016. (201) 272-7712.

Developing an Effective Drug Awareness Program — Jan. 17, Chapel Hill, N.C. — Edith Eubanks, ELB & Associates, Inc. 605 Eastowne Dr., Chapel Hill, NC 27514. (800) 334-5478.

Forklift for Operators — Jan. 18, Los Angeles — The Training Institute, Greater Los Angeles Chapter, National Safety Council, 3450 Wilshire Blvd., Los Angeles 90010. (213) 385-6461.

Defensive Driving for Professional Truck Drivers — Jan. 31-Feb. 1, St. Paul, Minn. — Minnesota Safety Council Resource Center, 474 Concordia Ave., St. Paul, MN 55103. (612) 291-9150 or (800) 444-9150.

Instructor Development Course for Professional Truck Drivers — Jan. 31-Feb. 1, St. Paul, Minn. — Minnesota Safety Council Resource Center, 474 Concordia Ave., St. Paul, MN 55103. (612) 291-9150 or (800) 444-9150.

FEBRUARY

DDC-8 — Feb. 5-7, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago 60611. (312) 527-4800, extension 8527.

Hazardous Materials Transportation Training — Feb. 7-8, St. Paul, Minn. — National Safety Council, 444 N. Michigan Ave., Chicago 60611 (312) 527-4800, extension 8407.

DDC-4 — Feb. 8-9, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago 60611. (312) 527-4800, extension 8527.

DDC-PTD — Feb. 12-14, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago 60611. (312) 527-4800, extension 8527.

Forklift for Operators — Feb. 15, Los Angeles — The Training Institute, Greater Los Angeles Chapter, National Safety Council, 3450 Wilshire Blvd., Los Angeles 90010. (213) 385-6461.

DDC-CTMD — Feb. 15-16, Chicago — National Safety Council, 444 N. Michigan Ave., Chicago 60611. (312) 527-4800, extension 8527.

August Traffic Deaths Down 5%

By MARY E. JOHNSTON
AND URSULA ZUEHLKE

Traffic Deaths by State

Deaths are reported by state traffic authorities. All figures are preliminary. To insure proper comparisons, 1987 and 1988 figures cover the same reporting period as those for 1989.

Population Rate: U.S. population rate is the estimated annual number of deaths per 100,000 population, assuming that deaths for the rest of the year will follow the normal seasonal pattern. State population rate is the estimated annual number of deaths per 100,000 population, assuming that the monthly average of deaths will remain at the present average for the rest of the year. U.S. population rate is based on July 1, 1989, population estimate; state population rates are based on July 1, 1988, population estimates, U.S. Bureau of Census, Washington, D.C.

States shown in CAPS have improved in 1989 compared with 1988.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

STATE NAME	MONTHS REPORTED	DEATHS IDENTICAL PERIODS 1989	1988	1987	PERCENT CHANGES 1988 TO 1989	1987 TO 1989	1989 POP. RATE	1989 MILE. RATE
Total U.S.	8	**30,520**	**31,630**	**31,230**	− 4%	− 2%	**19.0**	**2.4**
ALABAMA	8	654	659	722	− 1%	− 9%	24.0	2.6
ALASKA	8	50	56	47	−11%	+ 6%	14.3	1.6
ARIZONA	8	532	594	571	−10%	− 7%	23.6	2.5
Arkansas	8	409	369	410	+11%	− *%	25.7	3.1
California	8	3,385	3,212	3,436	+ 5%	− 1%	18.4	2.1
COLORADO	8	335	352	364	− 5%	− 8%	15.2	1.8
CONNECTICUT	8	252	305	270	−17%	− 7%	11.8	1.3
DELAWARE	8	72	115	95	−37%	−24%	16.8	1.7
D. of C.	8	55	41	34	+34%	+62%	13.1	2.4
FLORIDA	8	2,010	2,018	1,864	− *%	+ 8%	25.1	2.8
Georgia	8	1,037	1,022	913	+ 1%	+14%	25.0	2.4
HAWAII	8	92	99	89	− 7%	+ 3%	12.7	1.8
IDAHO	8	152	172	176	−12%	−14%	22.8	2.5
ILLINOIS	8	1,064	1,191	1,064	−11%	0%	13.8	2.0
INDIANA	8	628	675	718	− 7%	−13%	17.0	2.2
IOWA	8	336	353	312	− 5%	+ 8%	17.8	2.1
KANSAS	8	258	305	298	−15%	−13%	15.6	1.6
KENTUCKY	8	528	538	523	− 2%	+ 1%	21.3	2.1
LOUISIANA	8	499	552	544	−10%	− 8%	16.8	2.6
MAINE	8	143	159	149	−10%	− 4%	18.1	1.7
MARYLAND	8	470	510	505	− 8%	− 7%	15.5	1.9
MASSACHUSETTS	8	426	448	410	− 5%	+ 4%	10.9	1.4
MICHIGAN	8	1,040	1,062	994	− 2%	+ 5%	17.0	2.0
MINNESOTA	8	362	400	341	−10%	+ 6%	12.8	1.3
MISSISSIPPI	8	445	456	495	− 2%	−10%	25.4	2.9
MISSOURI	8	684	701	663	− 2%	+ 3%	20.1	2.2
MONTANA	8	119	133	152	−11%	−22%	22.1	2.1
Nebraska	8	196	169	188	+16%	+ 4%	18.4	2.0
Nevada	8	189	187	174	+ 1%	+ 9%	28.2	2.9
New Hampshire	8	130	113	116	+15%	+12%	18.4	2.0
NEW JERSEY	8	568	660	634	−14%	−10%	11.1	1.4
New Mexico	8	349	318	365	+10%	− 4%	34.9	3.2
New York	8	1,344	1,189	1,319	+13%	+ 2%	11.3	2.1
NORTH CAROLINA	8	916	970	995	− 6%	− 8%	21.4	2.1
NORTH DAKOTA	8	50	70	69	−29%	−28%	11.2	1.1
OHIO	8	1,033	1,049	1,032	− 2%	+ *%	14.4	1.9
OKLAHOMA	8	411	418	380	− 1%	+ 9%	18.9	2.0
OREGON	8	401	427	384	− 6%	+ 4%	22.1	2.7
Pennsylvania	8	1,213	1,135	1,221	+ 7%	− 1%	15.2	2.1
RHODE ISLAND	8	70	93	64	−25%	+ 9%	10.6	1.7
SOUTH CAROLINA	8	650	675	698	− 4%	− 7%	28.5	2.7
SOUTH DAKOTA	8	100	103	84	− 3%	+19%	21.2	2.2
TENNESSEE	8	694	792	770	−12%	−10%	21.4	2.4
Texas	8	2,140	2,116	2,080	+ 1%	+ 3%	19.1	2.0
UTAH	8	197	213	156	− 8%	+26%	17.6	2.3
VERMONT	8	69	70	69	− 1%	0%	18.9	1.9
VIRGINIA	8	622	672	654	− 7%	− 5%	15.8	1.6
WASHINGTON	8	399	519	486	−23%	−18%	13.2	1.5
West Virginia	8	300	287	309	+ 5%	− 3%	23.7	3.0
WISCONSIN	8	514	536	520	− 4%	− 1%	16.0	1.8
WYOMING	8	83	102	81	−19%	+ 2%	25.4	2.1
Puerto Rico#	8	314	386	389	−19%	−19%	17.3	
Virgin Islands#	7	6	11	10	−45%	−40%	18.5	
— CANADIAN PROVINCES —								
Alberta	8	289	291	335	− 1%	−14%	27.4	
British Columbia	7	298	307	279	− 3%	+ 7%	24.1	

*Less than 0.5%.

#Not included in the TOTAL U.S. death count or rates.

TRAFFIC SUMMARY

Month	Deaths 1989	Deaths 1988	Change
August	4,390	4,610	−5%
8 months	30,520	31,630	−4%
12 months Ending August, 1989	47,890	48,800	−2%

MOTOR-VEHICLE deaths in August totaled 4,390, a decrease of five per cent from the August 1988 total of 4,610.

Deaths for the first eight months of 1989 totaled 30,520, a decrease of four per cent from the 1988 eight-month total of 31,630.

Deaths for the 12-month period ending August totaled 47,890.

Disabling injuries for the first eight months of this year are estimated to be almost 1,100,000. These are injuries resulting in disability beyond the day of the accident, and do not include minor injuries which probably totaled as many more.

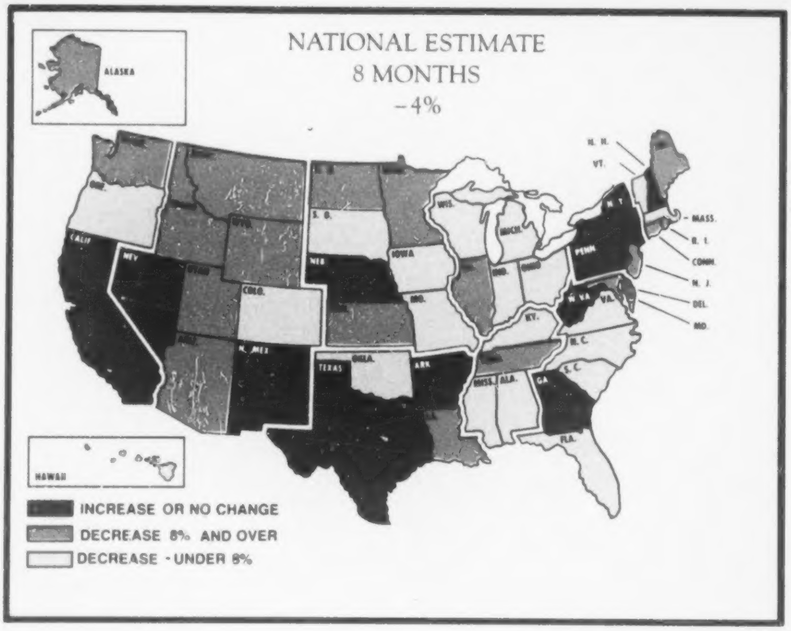
The cost of motor-vehicle accidents for the first eight months of this year is estimated at about $44 billion.

Based on preliminary vehicle mileage reports for this year, the estimated mileage death rate for the entire year is 2.4 (deaths per 100 million vehicle miles).

State Experience

Among the 50 states reporting August experience, 31 states had fewer deaths than in the preceding August, and 19 states and the District of Columbia showed increases in deaths. For the first eight months, 39 states showed decreases in the number of deaths, while 11 states and the District of Columbia showed increases.

Delaware	−37%
North Dakota	−29%
Rhode Island	−25%
Washington	−23%
Wyoming	−19%
Connecticut	−17%
Kansas	−15%
New Jersey	−14%
Idaho	−12%
Tennessee	−12%
Alaska	−11%
Illinois	−11%
Montana	−11%
Arizona	−10%
Louisiana	−10%
Maine	−10%
Minnesota	−10%
Maryland	− 8%
Utah	− 8%
Hawaii	− 7%
Indiana	− 7%
Virginia	− 7%
North Carolina	− 6%
Oregon	− 6%
Colorado	− 5%
Iowa	− 5%
Massachusetts	− 5%
South Carolina	− 4%
Wisconsin	− 4%
South Dakota	− 3%
Kentucky	− 2%
Michigan	− 2%
Mississippi	− 2%
Missouri	− 2%
Ohio	− 2%
Alabama	− 1%
Oklahoma	− 1%
Vermont	− 1%
Florida	− *%



MOTOR-VEHICLE DEATHS AND CHANGES TOTAL U.S.

	Deaths				Percentage Changes				
					Corresponding Month			4 Months Moving Avg. +	
Month	1986	1987	1988	1989	1987-1989	1987-1988	1988-1989	1987-1988	1988-1989
January	3,274	3,230	3,310	3,450	+ 7%		+ 4%		+ 2%
February	2,814	3,000	3,130	3,150	+ 5%		+ 1%		+ 2%
March	3,559	3,520	3,610	3,640	+ 3%		+ 1%		+ 4%
April	3,607	3,580	3,720	3,500	− 2%		− 6%		− *%
May	4,331	4,270	4,220	3,870	− 9%		− 8%		− 4%
June	4,460	4,280	4,320	4,080	− 5%		− 6%		− 5%
July	4,704	4,470	4,710	4,440	− 1%		− 6%		− 6%
August	4,895	4,880	4,610	4,390	−10%		− 5%		− 6%
8 Months	31,644	31,230	31,630	30,520	− 2%		− 4%		
September	4,197	4,380	4,450			+ 2%		+ *%	
October	4,244	4,520	4,500			− *%		+ *%	
November	3,920	4,200	4,010			− 5%		− 2%	
December	3,860	4,070	4,410			+ 8%		+ 1%	
TOTAL	47,865	48,400	49,000	47,890‡		+ 1%			

The 1986 figures are from the National Center for Health Statistics. The 1987, 1988, and 1989 figures are National Safety Council estimates.

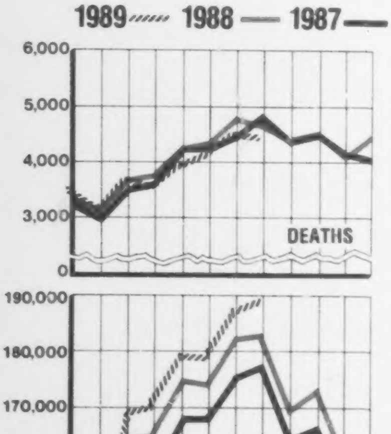
The 1989 national estimate is arrived at by assuming that the percentage change from 1988 to 1989 in the states reporting for both years reflects the 1988-1989 change in the entire country. First reports are preliminary, so revisions are made from time to time as later reports are received for the various months. Thus, figures above for 1989 may differ slightly from figures for the same months which will be published in future issues of TRAFFIC SAFETY.

+Four Months Moving Average is based on changes between the totals for four months instead of one month. For example, the August figure shows the change between the totals for May -August, 1988 and May - August, 1989, etc. Adding several months together tends to smooth out single month changes which may be affected by differences in the number of weekends in the month from one year to the next, random variations, etc.

‡Deaths for the 12-month period ending August, 1989.

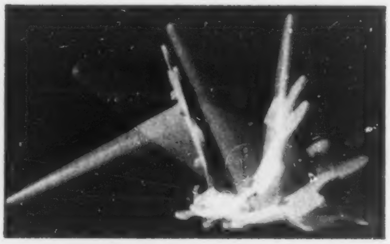
* Less than 0.5%.

MONTHLY MOTOR-VEHICLE DEATHS AND TRAFFIC TRENDS



NEW PRODUCTS

Upsy-Daisy Traffic Cones



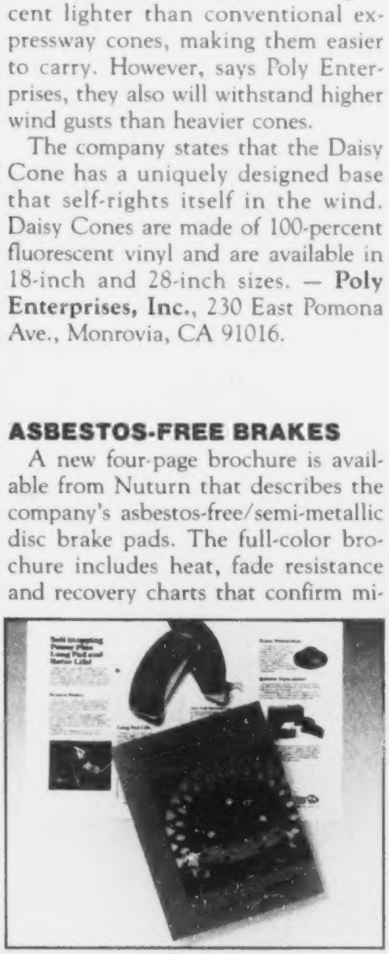
TRAFFIC CONES

Poly Enterprises introduces its "Daisy Cone." According to the manufacturer, these cones are 30 percent lighter than conventional expressway cones, making them easier to carry. However, says Poly Enterprises, they also will withstand higher wind gusts than heavier cones.

The company states that the Daisy Cone has a uniquely designed base that self-rights itself in the wind. Daisy Cones are made of 100-percent fluorescent vinyl and are available in 18-inch and 28-inch sizes. — **Poly Enterprises, Inc.**, 230 East Pomona Ave., Monrovia, CA 91016.

ASBESTOS-FREE BRAKES

A new four-page brochure is available from Nuturn that describes the company's asbestos-free/semi-metallic disc brake pads. The full-color brochure includes heat, fade resistance and recovery charts that confirm minor friction loss and rapid yet smooth recovery.



A wear-characteristics graph verifies minimal material loss per stop at operating temperatures under 550 F — the range covering the vast majority of normal driving. — **Nuturn Corporation, Automotive Products Division**, 1 Grizzly Lane, Smithville, TN 37166.

TRUCKING INFORMATION

This association announces publication of the new 1990 edition of *Trucksource*. This publication is a comprehensive information source for the trucking industry — containing more than 700 entries.

New subjects as well as expanded categories provide the resources necessary to meet the information needs of motor carriers and related industries. Informational sources listed range from books and periodicals to databases and directories.

Sources of information on legislative, regulatory and taxation issues are provided along with a special section, "Trucking and the Law," that details recent comments before federal agencies and ATA statements before Congress concerning current topics of interest to the trucking industry. — **American Trucking Associations**, 2200 Mill Road, Alexandria, VA 22314-4677.

LIGHT TRUCK TIRES

Two new bias-construction light truck tires have been introduced by Goodyear to accommodate the needs of nearly 30 percent of light trucks that do not use radials.

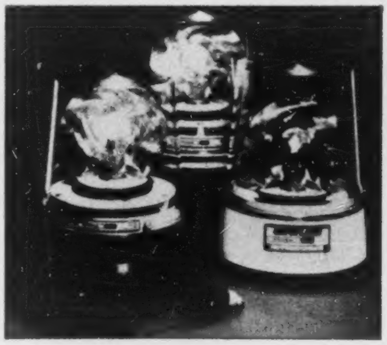
The Workhorse and the Workhorse M&S tires, initially offered in size 750-16, are the first in a complete line of bias-ply Workhorse tires that will be introduced in the near future. The Workhorse tire is designed to offer the driver of the older generation light truck a new highway rib design that channels away water for excellent wet highway traction.

The Workhorse M&S is made for drive axle use, where it gives dependable traction in mud or snow. — **Goodyear**, Akron, OH 44316-0001.

EMERGENCY BEACONS

Introduced are British-made vehicle beacons that use international standard "H1" series halogen lamps. "CRK" and "CRH" beacons from DG Controls incorporate rotating-mirror mechanisms that are virtually silent in operation.

Both models are molded in strong polycarbonate plastic in red, amber, green, blue and clear versions. The beacons can be permanently mounted on vehicles, and the company supplies fixing kits.



One of the CRK beacons has a magnetic base, the adhesion of which is supplemented by a suction pad. According to the manufacturer, this is useful for adapting a standard vehicle to emergency use. Another one incorporates a heater for use in low temperatures — for example, on a snow plow. — **DG Controls Ltd.**, Belvedere Road, Burton-on-Trent, Staffordshire, DE13 OLA, England.

COMMERCIAL VEHICLE

A new vehicle has been engineered and designed by Enterprise Bus Corporation. It incorporates a massive full-view windshield that allows maximum unobstructed forward and peripheral vision for safety and comfort. The full-width front hood door swings up and away, allowing ease of access to maintenance items such as fluid bottles, oil check and battery.

The vehicle body and aluminum tube structure is designed to withstand the vigorous elements of the commercial market, says the manufacturer. Support systems and interior features are meticulously designed and manufactured to meet the exact requirements of the purchaser.

Chassis gross vehicle weight ratings start at 16,000 pounds and heavier, and both gasoline and diesel engines are available for many applications. — **Enterprise Bus Corporation**, Box 4404, Elkhart, IN 46514-0404.

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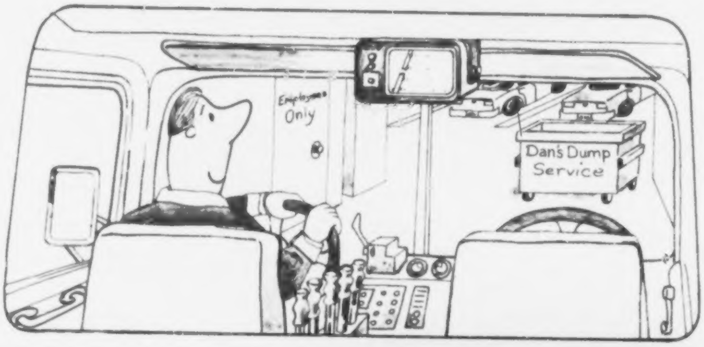

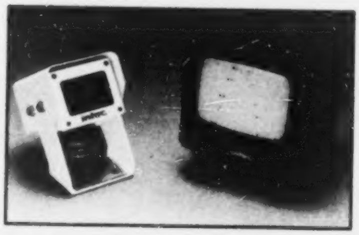

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TWO-WAY STREET

HELMETS: A SECOND OPINION

THIS SPACE is for dialogue with members of the professional traffic safety community, either through your letters or through excerpts from the kind of public comments experts might have put in letters to us if they had got around to it.

Address brief letters to Two-Way Street, TRAFFIC SAFETY Magazine, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. Letters may be edited. Views expressed do not necessarily represent the opinion of the National Safety Council.

Which Myths Truer?

Peter Fassnacht ("Myth and the Motorcycle Helmet," Sept./Oct., 1989) perpetuates one set of myths to counter another set of myths. Just as mandatory helmet law initiatives have fostered a series of questionable arguments in opposition to helmet usage those same initiatives have distorted the value and impact of helmet usage.

The 20-year campaign to mandate helmet usage for motorcyclists has resulted in a gross exaggeration of the importance of helmet usage as a primary safety strategy. There should be little surprise that exaggerations would also crop up on the opposite side of this debate.

If demographics and exposure (a common denominator such as miles traveled) were factored into the analyses of helmet-law impact, the overall effect would probably be classified as tertiary.

James J. Baxter
President
Citizens for Rational
Traffic Laws, Inc.
Dane, Wis.

Drivers Could Be Worse

The amazing fact involving automobile accidents is **not** the number that do occur but the fact that there are not more of them and they are not as serious as they could be. The number of drivers in America has increased to over 160 million. We are now traveling over two trillion miles per year. The mere exposure represented by such numbers would lead a person to believe that the numbers of accidents must be out of control. In reality we are killing fewer people and have a lower death rate (2.4 per 100 million miles) than at any time in recent history. No other country can match our safety record. All the more amazing when we realize we continue to increase our road travel by four percent per year.

Dr. Howard Matthias
Former director
Highway Traffic Safety Center
St. Cloud, Minn.
(Writing in the *Journal of Traffic Safety Education*)

Bring Back Siestas

Your article, "Snoozing Almost Worse Than Boozing" (May/June, 1989), made a timely point. The new research coming out shows that it's more natural than was previously realized for people to need a nap in late afternoon.

This has important implications for traffic safety. Here's what some of the experts have been reporting recently.

Roger Broughton, professor of neurology, University of Ottawa: "There's a well-documented drop in people's performance at work in midafternoon, along with a simultaneous increase in accidents resulting from sleepiness."

Peretz Lavie, sleep researcher, Technion Israel Institution of Technology, Haifa: "Alertness peaks in the morning and early evening. Volunteers who have trouble trying to sleep at those times readily fall sleep in midafternoon as well as at bedtime."

William Dement, director, Sleep Disorders Clinic and Research Center, Stanford University: "It seems nature definitely intended that adults should nap in the middle of the day."

David Dinges, sleep researcher, University of Pennsylvania: "After napping, people not only feel better, but do significantly better on tests of mental performance."

Cultures built around the siesta obviously were onto something. But, as developing countries industrialize, their governments consciously try to stamp out the custom.

It's probably too late to bring back the siesta, but some provision ought to be made to encourage people who operate dangerous machinery — especially buses, trucks and cars — to stop and take a nap when they feel drowsy.

Unfortunately, as things are now, a drowsy driver in most places would have a hard time finding somewhere to pull over safely. You'd be risking being rear-ended or sideswiped by another drowsy driver. At minimum, you'd be inviting the attentions of the police.

Michael Eldritch
New York City

HAZARDOUS MATERIALS TRANSPORTATION TRAINING FOR YOUR EMPLOYEES MAKES GOOD BUSINESS SENSE—AND IT'S THE LAW!

Transporting hazardous materials/dangerous goods is regulated in detail by the United States and foreign governments. In this country the Department of Transportation (DOT) administers the rules and guidelines set forth in Title 49, Code of Federal Regulations. The international transportation of dangerous goods (hazardous materials) by air is governed by the rules set forth by the International Civil Aviation Organization (ICAO) Technical Instructions. In both cases, these regulations *require* that all persons handling, documenting or transporting materials designated as hazardous or dangerous must receive *INITIAL* and *RECURRENT ANNUAL* training.

The National Safety Council's Hazardous Materials Transportation Seminar will help you comply with these Federal regulations.

WHO SHOULD ATTEND?

If you are a shipper:
Each and every employee who is involved in the shipping process of your company. This includes employees responsible for identifying, documenting, handling, packaging, marking, labeling, receiving, shipping and transporting hazardous materials/dangerous goods plus those responsible for managing and supervising these operations.

If you are a transporter:
All employees involved in the transportation process including package and cargo handlers, drivers, pilots, customer service personnel, and of course, those responsible for managing and supervising these functions.

PROGRAM COVERS

Day 1

Title 49, Code of Federal Regulations

- Regulatory Agency Review
- Purpose and Use of Hazardous Materials Tables
- Identifying and Classifying Hazardous Materials
- Packaging Requirements
- Marking and Labeling
- Shippers Certification and Other Documentation
- Vehicle and Container Placarding
- Enforcement Procedures and Penalties

Day 2

International Air Transport Association (IATA)/ International Civil Air Organization (ICAO)

- Review of Day One
- Introduction to IATA and ICAO Regulations with comparative analysis of Title 49, CFR
- The Dangerous Goods List and Its Use
- Packaging Requirements: UN/ICAO, DOT, IATA
- Marking and Labeling
- The Dangerous Goods Declaration Form and Bill
- The U.S. Government (USG) Variations and Their Impact

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Baltimore, MD	April 10-11
West Springfield, MA	April 24-25
Kansas City, MO	May 8-9
Memphis, TN	May 15-16

THE INSTRUCTOR

Darlene W. Hunt is a nationally recognized expert in the domestic and international transportation of hazardous materials and dangerous goods. With over ten years experience in the hazardous materials transportation field and additional resources of more than twenty years experience, Ms. Hunt and her asssociates are able to provide an effective and insightful program. Her delivery is known for turning a subject matter often viewed as tedious and complex into an exciting and meaningful learning experience.

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Please include check or money order payable to: National Safety Council. For further information, contact Tim Kennedy (312) 527-4800 x8407, 8:30 a.m.-4:45 p.m. Central Standard Time

☐ YES. PLEASE REGISTER THE FOLLOWING EMPLOYEE(s) IN THE TRANSPORTATION OF HAZARDOUS MATERIALS WORKSHOP INDICATED

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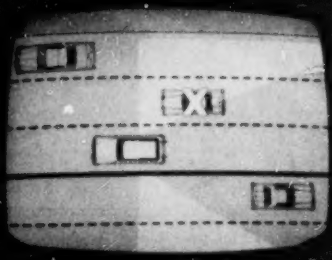

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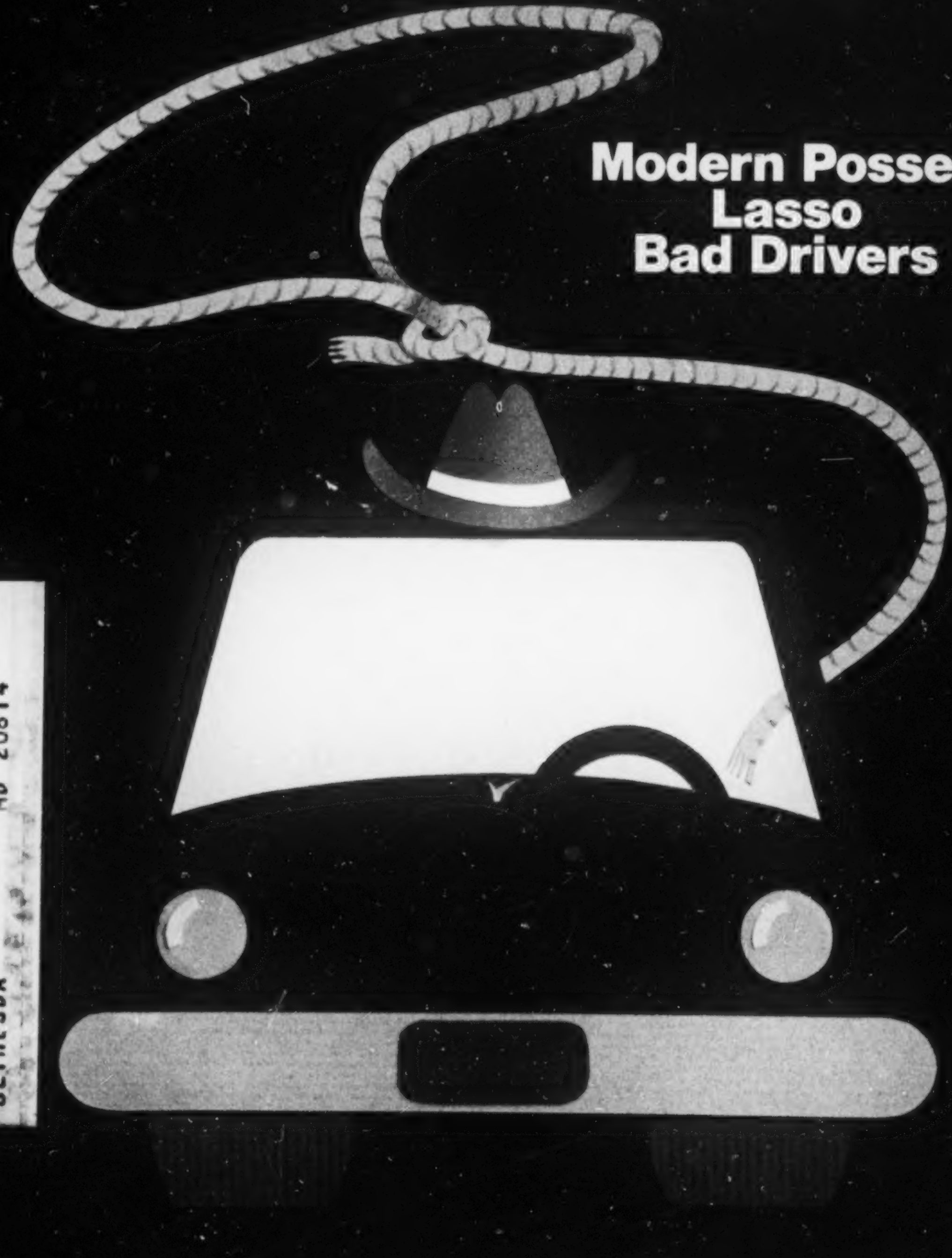

Modern Posses Lasso Bad Drivers

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MARCH/APRIL, 1990

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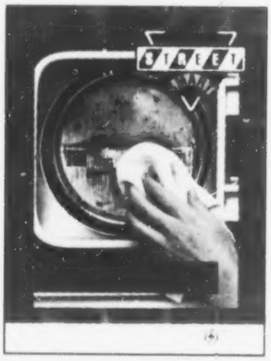

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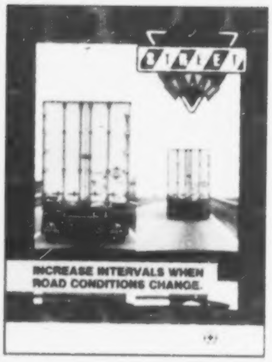
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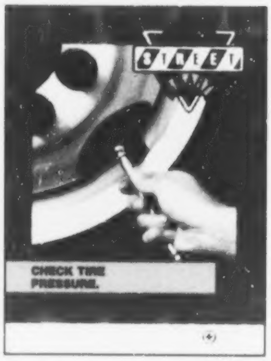
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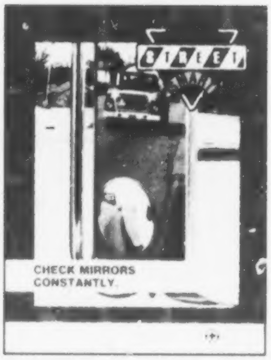
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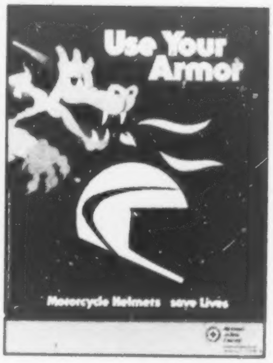
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Publisher: Kevin H. Axe (312) 527-4800, ext. 7101

Editor: Roy Fisher (312) 527-4800, ext. 7108

Coordinator: Richard Frisbie

Managing Editor: Susan-Marie Kelly, (312) 527-4800, ext. 7114

Associate Editors:
James W. Lahey and Peter Minetos

Art Director: Anne F. Malone

Cover: Constructs Studio, art; Terry Vitacco, photo

Director, Publications Marketing: Kevin Shanley, (312) 527-4800, ext. 7401

Advisors

Noel Bufe, Ph.D., *director, Traffic Institute, Northwestern University, Evanston, Ill., vice president for traffic;* Walter D. Weiss, *group director of safety, Leaseway Transportation Corp., Birmingham, Mich., vice president for motor transportation;* Neil Boot, *director, driver improvement programs;* Ted E. Dudzik, *traffic law enforcement and police records specialist;* Jan Hazlett, *school transportation safety specialist;* Tim Kennedy, *occupant restraint specialist;* Al Lauersdorf, *alcohol programs administrator;* John McCarthy, *manager, program development and training, driver improvement programs;* Harold Thompson, *manager, highway traffic safety services;* Lester B. Sokolowski, *director, motor transportation;* James Solomon, *administrator of training, driver improvement programs;* Richard L. Tippie, *director, transportation safety.*

TRAFFIC SAFETY (ISSN 0041-0721) is published bimonthly by the NATIONAL SAFETY COUNCIL, 444 N. Michigan Ave., Chicago, Ill. 60611. Copyright © 1990 by National Safety Council. Printed in U.S.A. Second Class postage paid at Chicago, Ill. and at additional offices. POSTMASTER: Send address changes to National Safety Council, 444 N. Michigan Ave., Chicago, Ill. 60611.

U.S. Subscription rate: $15.20 to members of the National Safety Council; $18.98 to non-members. Quantity and foreign rates available on request.

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March/April 1990

National Safety Council

TRAFFIC SAFETY

Vol. 90 No. 2

MODERN POSSES LASSO BAD DRIVERS 8
THOMAS FRISBIE
Car phones and radios alert police

COOPERATION DOWN THE ROAD 11
Public-private partnerships to make traffic better

WIMPY LIGHT TRUCKS FORCED TO GET TOUGH 16
JIM CASTELLI
Must meet passenger car standards

ONCE UPON A STRETCHER 19
PATRICIA A. DONAHUE
Horror-story 'docu-drama' helps young people grow up

KEEPING SCORE LOWERS TOLL 23
DR. DAVID B. BROWN, KEN BRADLEY and DENNIS WELDY
New computer record system quickly highlights death traps

CULTIVATING THE GRASSROOTS 27
MORENE DUNN
How to avoid boos at public hearings

4 Two-Way Street
5 Survey
6 Today's Traffic
7 Shortcuts
22 Events
29 New Products
30 Library
32 Statistics

While the information and recommendations contained in this publication have been compiled from sources believed to be reliable, the National Safety Council makes no guarantees as to, and assumes no responsibility for, the correctness, sufficiency, or completeness of such information or recommendations. Other or additional safety measures may be required under particular circumstances.

Home Office: 444 N. Michigan Ave., Chicago, Ill. 60611, (312) 527-4800

Printed in U.S.A.

Stock No. 311.03-020

TWO-WAY STREET

Oblivious Drivers

This space is for dialog with members of the professional traffic safety community, either through your letters or through excerpts from the kind of public comments experts might have put in letters to us if they had got around to it.

Address brief letters to "Two-Way Street," TRAFFIC SAFETY Magazine, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611.

Letters may be edited. Views expressed do not necessarily represent the opinion of the National Safety Council.

COMMENTS on your (vehicle options) survey:

Seat belts: EVERYONE knows how effective they are whether they are bright enough to wear them or not. Enough said.

Cruise control: I know of one accident where the driver was not as attentive as he should have been because he was using cruise control. He found himself daydreaming much more because his mind was not occupied with "driving" the car.

In addition, when people use cruise control, they tend to move their feet away from the gas — and brake — pedals, thus making their reaction time longer.

Telephones: One of my biggest pet peeves. A week seldom goes by when I do not witness drivers — using a car phone — drift out of their lane, cut someone off, make an illegal lane change or other stupid action because they are too busy talking on the phone and writing on those little suction-cup paper pads stuck to the inside of their windshields.

Their actions are usually of the type that cause others to react and get into accidents while they drive off, oblivious to life in the fast lane. People who find it necessary to talk and drive at the same time should put on a headset type receiver when they get into the car and not take it off until they get out — thus leaving their hands free to do something beneficial like drive the car.

Ford T. Sakata
Safety Specialist
Melrose Park, Ill.

Flexible Chin Bars

Full-face motorcycle helmets are widely used and provide valuable protection against facial injuries. However, in recent years international reports have suggested a link between skull-base fractures in fatally injured motorists and the wearing of full-face helmets.

Research by the Australian Craniofacial Unit has identified the likely cause as the rigidity of the helmet face bar. An impact to the face bar may be passed back through the chin strap and lower jaw with fatal consequences.

As a result of these findings, the Australian Craniofacial Unit joined forces with the South Australian Centre for Manufacturing Pty. Ltd. to develop improved helmet designs.

These involve modifications to the lining and front of the helmet:

- A redesigned chin bar, which impedes rearward movement of the helmet relative to the head
- Two adjustable cheek bars designed to retard the rearward movement of the helmet
- An inner helmet that can move independently of the outer shell, through the use of energy-absorbing materials.

We are now seeking expressions of interest from manufacturers.

John D. Cambridge
Chief Executive Officer
South Australian Centre
for Manufacturing Pty. Ltd.
PO Box 413, Woodville
South Australia, Australia

Pedestrians With Wheels

It's too late to do anything about it in the U.S. now, but a bicyclist should really be viewed as a pedestrian with wheels rather than the operator of a vehicle without an engine. Failure to understand this has led to a lot of our problems in mixing bicycles with motorized vehicles on the streets.

The Dutch understand bicycles better. In a nation of 14 million, they own 11 million bikes. There are 9,000 miles of bike paths. Train stations have ample parking for bikes, and rail passes allow cyclists to take their bikes on board. Last year the Dutch government launched a program to combat air pollution by encouraging bicycle use even more.

According to *World Watch* magazine, only 2.7 million Americans commute regularly by bicycle. Many more would use bikes if they found it safe and convenient. All it would take would be more designated bike lanes, bike parking at commuter stations and higher auto parking taxes.

Covering a mile on a bike takes 35 calories and is good for you.

An auto traveling a mile burns 1,900 calories of fossil fuel.

Stan Novak
St. Louis

HOW ARE THINGS IN GLOCCA MORRA?

Survey inquires about your community

THIS month's survey relates to several of the articles appearing in this issue. Sometimes, what works in one town doesn't work in another. Conversely, there are times when new techniques are so successful they spread faster than people realize. We'd like to know what's happening in your area.

TRAFFIC SAFETY will tally your answers and pass along to the traffic safety community what you're telling us.

Comments Invited

Make your answers as extensive as you like. You can either check off the answers to the questions below and stop or add your comments as well.

You can just tear out this page and send it in. Or, if you have to share your copy of TRAFFIC SAFETY with others, you may want to photocopy the page. Then you can write your comments on the back.

Mail your responses to:

TRAFFIC SAFETY Survey
National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611

	Yes	No
1. Does your community have formal cooperation between public agencies and private organizations on traffic safety like the Community Traffic Safety Program described in "Cooperation Down the Road"?		
2. Would it be a practical idea in your town for drivers with cellular telephones to report instances of drunken or reckless driving to police as they are occuring?		
3. Could reports be useful that came from radio-equipped vehicles through their dispatchers?		
4. Would reporting be useful via CB radio?		
5. Does your accident record system provide immediate analysis of problem intersections?		

TODAY'S TRAFFIC

Trucks To Right May Be Wrong

Restricting trucks to the right lane on limited access highways does not increase safety for other motorists, but could increase hazards, according to a survey by the AAA Foundation for Traffic Safety.

If a highway has a high volume of truck traffic, keeping trucks nose to tail in the right lane leaves fewer acceptable gaps for traffic entering the highway from ramps. This makes it difficult for oncoming motorists to merge and thus creates a hazardous situation, the report said.

For more information, contact the foundation at 1730 M. St., NW, Suite 401, Washington, DC 20036 or call (202) 775-1456.

Looks Like 65 MPH Is A Killer

A study indicated that highway fatalities have doubled since Interstate speed limits were raised to 65 mph in 1987, the *Journal of the American Medical Association* reports.

A study of accidents on New Mexico's highways showed fatalities increased to 2.9 deaths per 100 million vehicle-miles traveled, nearly twice the predicted 1.5 deaths per 100 million vehicle-miles.

Although alcohol and safety belt use were involved significantly in the fatalities, there was no difference of percentage of involvement before and after the speed change. But the percentage of victims ejected from their vehicles increased from 49 percent before the change to 70 percent the year after.

The report said, "Because the energy released in a crash is directly proportional to the square of the velocity of the vehicle at the time of impact, a small increment in speed will greatly increase the energy of the crash."

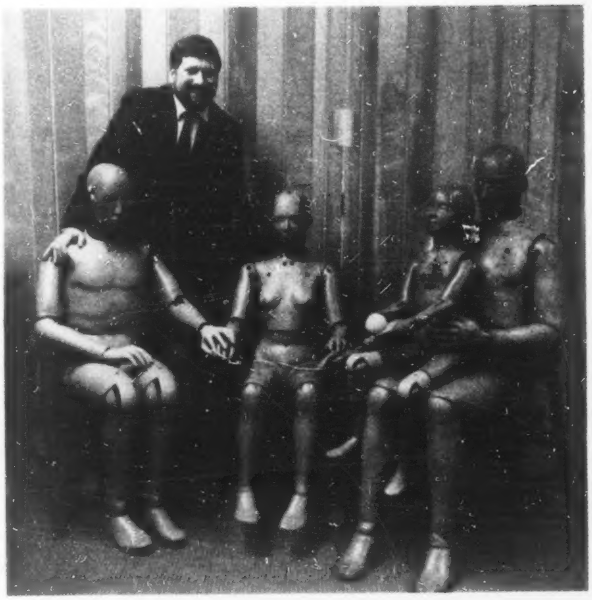
Worker Safety Design Winners Told

The National Research Council has announced 37 winners of its contest for innovative ideas to protect highway maintenance workers.

The three top winners included:

- A special lighting system for the back of snowplows and salt spreaders that makes them more visible;
- A sign alerting drivers to construction ahead that can be easily installed and moved;
- A quickly installed mobile crash-protection device that closes off an entire traffic lane.

Crash-Dummy Family Created



At first, the challenge sounded easy to Dr. Richard L. Stainaker: Design a family of auto-crash dummies.

But the professor of mechanical engineering at Ohio State University found that making the standard Hybrid III dummy smaller would't be enough. Hybrid III represents the"average" adult male. His project is to design a 103-pound female, a 226-pound male and a 45-pound child crash dummy.

Working under a grant from the Center for Disease Control (CDC), his job is to scale responses of the three new dummies up or down from Hybrid III. But he found that fitting the right instrumentation into the smaller bodies was a real problem, according to the university's publication, *News in Engineering*.

It is estimated that the cost of the new dummies will be about the same as that for Hybrid III — $100,000.

The picture shows Stainaker with Hybrid III and the rest of the new "family."

Achtung! Don't Jaywalk In Milwaukee

Visitors to Milwaukee can have an unpleasant experience if they jaywalk in the city.

It has long had a toughly enforced law against the practice and out-of-town offenders have been spreadeagled, searched and taken to the station with sirens screaming. Once there, they have had to post bond of $37, the maximum fine for jaywalking, reports the *Wall Street Journal*.

The police chief told the newspaper that the city has cut its pedestrian deaths "significantly" since the law was passed in the 1960s.

Sleepiness Perils Truckers, Shift Workers

Two groups that are endangered by falling asleep at the wheel are truck drivers and shift workers who drive as part of the job.

According to the Sleep Science Information Center, New York, the one million tractor-trailer drivers in the U.S. suffer from inadequate sleep while driving. It said that in 1988 more than 5,600 people were killed in truck-related crashes. The center estimated that one-third of the truckers may be too tired to avoid a major crash. It added that truck drivers are ranked among the highest risk groups for occupational fatalities in the U.S.

Shift workers who drive on the job are subject to having their body clocks go out of sync with the work cycle. According to the center, shift workers have twice the number of vehicle collisions as nine-to-five workers.

Such shift workers include police, fire, airline and emergency medical services pilot personnel.

Alcohol/Crash Involvement Drops in '80s

The proportion of drunk drivers in fatal crashes dropped from 30 percent to 25 percent from 1982 to 1987, reports the National Highway Traffic Safety Administration (NHTSA).

The greatest reduction was among teenagers. Female drivers, older drivers and drivers in day-time crashes also showed substantially reduced alcohol involvement in fatal crashes. The figures for drivers aged 25 to 34, motorcyclists, pedestrians 20 to 64 and drivers in late-night collisions showed little change.

The NHTSA said the reduction may have been caused by:

- Increased public awareness of the dangers of drinking and driving;
- Tougher anti-drinking-and-driving laws and better enforcement;
- Raising of the drinking age in all states to 21;
- Prevention and intervention programs, such as designated drivers;
- Decline in the population of youthful drivers, who are usually over-represented as drinking drivers;
- A decrease in U.S. per capita drinking.

The NHTSA report said that, despite the gains, the magnitude of the problem still justifies major involvement by public health and transportation agencies. It also expressed concern about what it saw as waning media attention to the problem.

SHORTCUTS

Safety Gets Trendy

Market conditions, if present perceived trends continue, could mean safer conditions on the nation's highways.

First, fierce competition in the trucking industry could force marginal operators off the road.

The 1980 *Motor Carrier Act*, which removed federal regulation of the industry's rates, started the cutthroat competition. A spokesperson for the Byrd Motor Line, Lexington, N.C., says:

"Many comparatively small, cutthroat operators have temporarily slashed rates to get a share of the market. These carriers cannot continue to haul freight at the same unreasonably low rates for a long period of time and still operate on our roads in a safe manner."

James Harkins, executive director of the Regular Common Carrier Conference, Washington, D.C., says somewhat the same thing, according to Knight-Ridder Newspapers. He says, "Some independent companies have been able to continue to run on a temporary basis, but unfortunately, they're running on conditions that are not safe — old tires, no maintenance and bad brakes."

Carriers told the newspaper chain that before deregulation, the nation had some 14,600 regulated trucking companies. After deregulation, virtually anybody who could raise a down payment on a truck and get insurance could become a carrier.

Perhaps the tight competition will force marginal companies off the road or into the maintenance pit.

Safety Sells Autos

Second, the Insurance Information Institute, New York, says that safety is becoming a selling point on the showroom floor.

Auto makers and their dealers are still selling performance and style, but safety features are getting more attention, reports the institute's *Insurance Review*." The magazine quoted Sam Yaksich, executive director of the Foundation for Traffic Safety:

"This is an unusual twist for car makers. They're used to talking about speed, style, stereo systems — everything but safety. But the American public wants quality, and safety is quality. The automakers are used to telling the public what it wants. Now they're going to have to give the public what it wants. This new trend is refreshing."

Such soothsayers aren't just talking about the heavily reported installation of airbags and anti-lock brakes.

General Motors is working on a radar device that warns of obstacles when a driver is backing a vehicle.

Several car makers are trying to adapt military night-vision technology to autos. Placed in the windshield, the system would make objects on the road much more visible at greater distances after dark. General Motors, the *Review* says, is already offering a display taken from fighter aircraft. Speed, fuel and other driver data is projected from the windshield so that it "floats" above the hood, well within the driver's vision field.

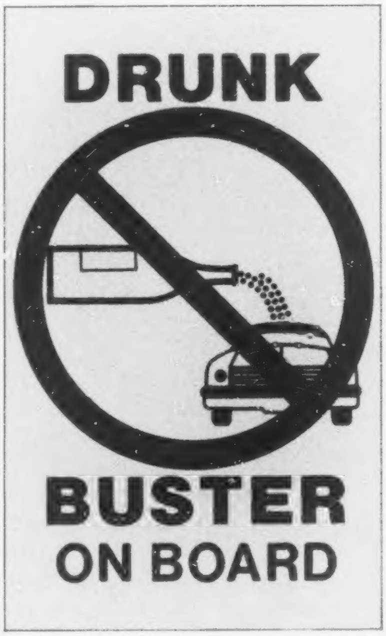
Market research done by Ford Motor Co. reinforces the view of auto customers as safety advocates. A spokesperson said that over the past three years, safety has become more and more an issue that affects what people buy. Car buyers are now asking when airbags will become standard for passenger seats.

Long live the latest trend.

MODERN POSSES LASSO BAD DRIVERS

Car phones and radios let citizens alert police

BY THOMAS FRISBIE



Drunk Buster emblem identifies vehicles whose drivers use their communications equipment to report drunk drivers in time to stop them.

GEORGE House first thought of getting up a posse when his son saw a man who had been drinking alcohol smash his pickup truck into a church bus.

House's son, riding in another bus along a Kentucky highway behind the church bus on May 14, 1988, witnessed the collision, which killed 27 people. Listening to the frightening account of a smashed bus bursting into flames, House decided that someone should mount an effort to scout the region's highways for unsafe drivers.

Many committee meetings later, House's notion led to the creation of Drunk Busters. Covering all of Jefferson County, Ky., which includes Louisville, the Drunk Busters program encourages drivers of everything from school buses and cabs to floral delivery vans and concrete mixers to report immediately to police any erratic driving they observe.

'Remarkable Success'

"This thing has generated a lot of interest," said Bob Yates, deputy director of public affairs for Jefferson County. "It has been a remarkable success."

Across the country, similar bands have been rounded up in cities, villages, counties and states. Last December 11, President Bush said the campaigns by citizens' groups against drunken drivers are "one of the most amazing success stories of the 1980s."

Drunk Busters just report what they see on their routes.

During the past decade, citizens groups often concentrated on enacting tougher legislation against drunken driving and monitoring courts. Yates believes efforts in the 1990s are likely to focus on programs similar to Drunk Busters. "The thing has generated a lot of interest," Yates said. "We have received correspondence from more than half the states and two provinces in Canada."

In Jefferson County, the Allied Florists of Louisville, two cellular-telephone companies, Gray Line Tours and operators of 22 other vehicle fleets instruct their employees to keep an eye out for erratic driving. The largest fleet in Drunk Busters belongs to the U.S. Postal Service and has 700 vehicles. The smallest, operated by Spindletop Draperies, has only three. All in all, more than 4,000 Louisville-area vehicles display the *Drunk Buster on Board* logo to warn drivers that the roads are being watched.

The idea is not for drivers of buses or concrete mixers to hit the trail looking for drunken drivers, Yates said. Rather, as they drive their daily routes, they are asked to head off drunken drivers at the passing lane by reporting them to police. "We look for description of the car — what type of vehicle it is — and a location," Yates said. Once Drunk Busters has turned in the report to police, that driver's involvement is finished. "We don't ask them to testify in court or do anything else."

In the first 11 months of 1988, Jefferson County, which covers 365 square miles and has a population of 850,000, had a total of 7,115 drunken-driving arrests. During the same period in 1989, that number rose to 8,584. Since Drunk Busters was inaugurated on Dec. 14, 1988, more than 300 sightings of erratic drivers have been reported to police.

Yates is quite pleased with the results. "That may not seem like a lot, but before that we had none." Although Yates doesn't have the manpower to track the outcome of each report to police, he said, "We are confident that Drunk Busters did play a role in the increase in arrests."

Overenthusiasm Discouraged

Traditionally, law enforcement authorities have been cautious about inviting citizens to participate in patrols. It's tempting for some citizens to get overly enthusiastic. Last July, for example, a 17-year-old driver (who was not part of any anti-drunken driving group) wrecked his car in Illinois after pursuing a motorist he believed was driving under the influence of alcohol. The motorist who got away had been traveling at 125 mph.

"We don't encourage people to go out and do patrols. Police generally want that left up to them," said John McLeod, director of safety for the Motor Transport Association of Connecticut. "Police aren't asking you to go out on your own time to look for someone who is driving drunk."

Don Weiland, president of Rochester Against Intoxicated Driving in New York, said his organization also concluded that full-service posses are passe.

"That is something that we have left to the police agencies because they know what they are doing and they are much more efficient. Also, most of our members are extremely busy doing all kinds of other things relative to the drunken driving problem," Weiland said.

Increasingly, however, police are welcoming the eyes and ears of citizens' groups and fleet drivers who are on the streets performing other duties. And troubling new statistics show that more eyes and ears may well be needed.

Alcohol-related highway deaths dropped steadily to 22,360 in 1985 from 25,170 in 1982 as many states enacted tougher penalties for drunken driving. But the totals have risen slightly since then. In 1988, 23,352 highway fatalities, or about half of all traffic deaths, were alcohol-related.

Those types of statistics are what motivate the members of the Alliance Against Intoxicated Motorists (AAIM), which has operated an "Extra Eyes" program in the Chicago metropolitan area since 1982. During that time, AAIM's members claim to have given police tips that led to some 2,000 arrests.

"It is one of the few things that will help a grieving parent whose child has been killed by a drunken driver — the knowledge that they really are doing something to save another parent from going through that unnecessary grief," said AAIM member Shirley Binning, one of the original AAIM members.

Binning's 22-year-old son was killed on a sunny afternoon by a college student who she said had been drinking all night to celebrate good grades, and then ran a red light at 70 mph.

For two straight years, Binning and her husband, Rich, patrolled area highways every weekend night, looking for motorists weaving from lane to lane, pumping brake pedals for no reason, making unnecessarily wide turns or exhibiting other signs of drunken driving. They were joined by a handful of other observers who had been trained by Illinois state police.

Police training for volunteers reduces time-wasting calls.

"The name 'Extra Eyes' came from the Illinois state police," Binning said. "They actually invited us on a Memorial Day weekend to do a test program spotting impaired drivers. When we first did it, we ended up being credited with 17 arrests that police would not have made had we not been out there to spot those impaired drivers for them. It was quite successful and they decided to go further and train us more thoroughly."

Phones Better Than CB

At first AAIM members used citizens band radios, but in recent years they have switched to cellular car telephones, which Binning prefers. "The car phones are more effective because you can have direct contact with police. Not all police departments have CBs or a dispatcher who monitors CBs. With a telephone, you can keep giving the location of the possible offender until police arrive on the scene."

Despite its success, AAIM remains small. Only a handful of members have completed the state police training program and take part in regular patrols. But state officials are adding more horsepower to the posse. One program that will augment AAIM's efforts was unveiled last August by the Illinois Department of Transportation. It is a new $700,000 system that allows all car telephone users on expressways to dial 999 to report accidents, breakdowns or drunken drivers. Similar cellular emergency numbers have been set up in Michigan, Ohio and Wisconsin.

Another program that is adding lots of extra eyes and ears to law enforcement is called Fleetwatch. It started five years ago in Skokie, a suburb north of Chicago, and has spread to numerous other Chicago suburbs and to other cities in downstate Illinois, including Springfield, the capital.

Unlike AAIM, which is composed of citizens, Fleetwatch comprises drivers in municipal and corporate vehicle fleets. Fleetwatch has created an enormous posse of observant outriders who keep an eye on the terrain as they go about their daily tasks. Participants in Fleetwatch include municipal public works departments, a regional suburban bus agency, township highway commission vehicles and cable television service trucks.

Each vehicle in Fleetwatch carries a sticker with a picture of McGruff, whom children know as a crime-prevention character wearing a trench coat. Last October, the bus drivers in the Fleetwatch program alone made 259 reports to police. Both drivers and their dispatchers are trained to work with police.

"As far as I'm concerned, it's going very nicely," said Skokie Police Officer Jim Chwalisz, who coordinates Fleetwatch.

Fleetwatch's drivers don't just look for drunken drivers. They report traffic accidents, suspicious-looking circumstances that might indicate a crime in progress, malfunctioning stoplights and other information police might be interested in. McGruff is on the Fleetwatch logo so that lost or frightened children know they can approach a Fleetwatch vehicle for help.

Extra Eyes and Ears

"What makes it so effective is you have all these people who are out there anyhow," Chwalisz said. "They are traveling around the neighborhoods. By training them so they know what to watch for and things that should be considered suspicious, it gives law enforcement a lot of extra eyes and ears."

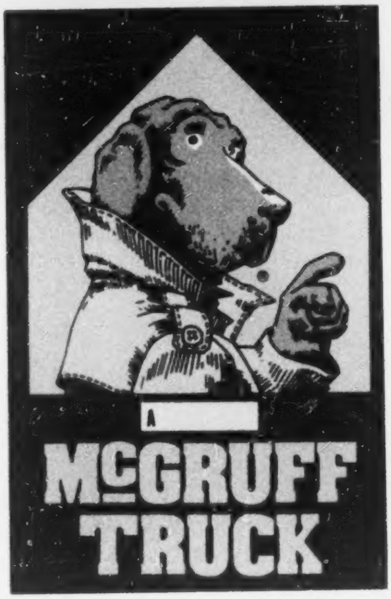
Extra eyes and ears also have been added to Fond Du Lac County, Wis., which has a population of about 90,000. Fond Du Lac County is involved in a three-year-old Fleetwatch program that is similar to Skokie's. About 500 vehicles belonging to the local power utility, municipal public works departments and cable-TV firms carry the Fleetwatch logo. "We have been extremely happy with it," said Bud O'Neill, crime prevention office of the Fond Du Lac police department. "Anything that gets the people involved is helping us."

About half the reports involve traffic collisions, said Jerry Jaye, crime prevention officer for the North Fond Du Lac police department. And police have found that their training programs for Fleetwatch drivers have worked out well. "A lot of people were fearful that it would generate more calls than we had squads to handle. That's why we didn't just slap stickers on vehicles. We went out and talked to employees in vehicles. We talked to their dispatchers. Proper training certainly has eliminated a lot of the police departments' early concerns."

Memorial Day test rounded up 17 bad drivers going thataway.

Unfortunately, a lot of those extra eyes and ears ride back home as the sun sinks below the hills and the number of drunken drivers on the roads tends to increase. "Most of the vehicles in our program are off the streets by the end of the day," O'Neill said.

That's why the Fond Du Lac Fleetwatch program began discussions last year with a local pizza-delivery firm in an effort to maintain a closer watch on the streets in evening hours. "The pizza delivery drivers work until 3:00 a.m. or 4:00 a.m., and that's when the drunks are out," O'Neill said.



In Fleetwatch communities, children are taught they can approach a "McGuff Truck" if they need help.

Truck Watchers

While the Fleetwatch programs concentrate on watching other drivers, the Edart corporation in Connecticut is busy keeping its eye on its own 1,600-truck fleet. In 1986, Edart set up a system for referring complaints about drivers to the firms that lease its trucks. Police are not involved. Instead, complaints from motorists or company employees are routed to the customer who leases the truck in question. Edart also has a station wagon that travels Connecticut roads for four to eight hours a week to monitor how Edart trucks are being driven. The station wagon's drivers turn in some five to 10 complaints a month. More complaints come from other motorists.

"There are passenger complaints about drunken driving, reckless driving and improper lane changes. Most of the time it has really been, and still continues to be, speeding and tailgating," said Howard Siegal, Edart's vice president of operations and safety.

Do the customer firms follow up on the complaints?

"Some respond, others take it and may go in one ear and out the other. Do I think some of customers are doing a better job? Absolutely. The ones that care, that's the key," Siegal said.

Edart's program is significantly different than Fleetwatch, which itself is unlike AAIM in many respects. And that's a problem, some officials say. With modern posses structured in so many different ways, it's hard to keep people from riding off in all different directions at once.

"They go by a variety of different names and unfortunately, it's difficult to catalog them. There's fragmentation," said Don Perretz, crime prevention specialist for the Wisconsin Department of Justice. Last December, Perretz's department began drawing up a survey to find out what programs are operating and how they are doing.

Fleetwatch drivers scout other problems as well.

But in Jefferson County, Kentucky, officials know how they want to solve the fragmentation problem. They would like to see citizen and fleet involvement grow and overlap until the whole county is involved.

"This is just the beginning," Lt. Col. Dave Whalin, assistant chief of the Jefferson County police, said when the creation of Drunk Busters was announced. "We hope eventually to involve the entire community in watching for drunk drivers.

"We're going to make everyone a Drunk Buster."

FOR YOUR SAFETY
Speed Limits Will Be Strictly Enforced
On The Next 6.4 Miles of Route 220
A Cooperative Traffic Safety Project Of
Clearbrook Civic League
STANFORD & IN Sign Co.
VIRGINIA STATE POLICE

Eddie Hopkins, president of the Clearbrook Civic League, and Roanoke County Sheriff Michael F. Kavanaugh show off a billboard demonstrating cooperation between community groups and law enforcement agencies to make highways safer.

COOPERATION DOWN THE ROAD

Public-private partnerships to make traffic safer

"COMMUNITY Traffic Safety Programs are the wave of the future. We can say that because they make sense and they work." That's what officials of the National Highway Traffic Safety Administration (NHTSA) told TRAFFIC SAFETY.

A Community Traffic Safety Program (CTSP) is one that operates at the local level and relies on a public-private partnership to take a coordinated, multi-agency approach to a community's traffic safety problems.

Broadly based community participation in traffic safety issues has become increasingly critical as resources have become scarce and traffic safety has become recognized as a significant public health issue. Although state highway safety agencies continue to play a vital role in providing technical assistance, public agencies, such as schools, police, courts and rehabilitation agencies, have long realized that they can't solve the community's problems alone.

Police and courts can't solve traffic safety problems alone.

NHTSA stresses the importance of private-sector involvement. In fact, NHTSA doesn't think you can have a successful CTSP without it. A CTSP is tailored to the needs of a particular community. When people have a role in defining the problems, then agreeing on possible solutions, they become more enthusiastic about making the resulting program work. Individuals from the private sector begin to realize how they benefit when traffic safety improves in their home town.

When the whole community shows concern, it is possible to gather better information about where and why crashes occur and what can be done to protect people from being injured or killed on the streets.

NHTSA can point to a number of communities where CTSPs are already thriving. Among them are Allentown, Pa; Clearwater, Fla.; Huntsville, Ala.; Irvine, Calif.; New York City; San Antonio, Tex.; Suffolk County, N.Y.; Roanoke County, Va.; Hamilton County, Ind.; Butte County, Calif.; Stillwater, Okla.; Missoula, Mont. and Kent, Wash.

Following are detailed descriptions of two of them.

ROANOKE COUNTY

Roanoke County is a mostly urban 253.3 square mile area located in the Roanoke Valley of southwest Virginia. The county has a population of 77,000 and skirts the cities of Roanoke (population 101,200) and Salem (population 25,000).

U.S. Route 220 is a major highway artery for southwest Virginia traffic traveling between Roanoke and central and western North Carolina. For the most part, the topography is hilly and mountainous, creating naturally hazardous conditions.

A 6.4-mile stretch of U.S. Route 220, which runs through the center of the Clearbrook area, has a daily traffic count of more than 20,000 vehicles. This particular section of roadway is hilly and curving. The 6.4-mile stretch has 146 entrances, including 30 roadways, 81 private drives, 31 business entrances, three churches and one school. One roadway just south of the school is also an entrance for emergency fire and rescue vehicles. After the first six months of 1986 crashes were occurring at a rate that would exceed the previous year's numbers.

Roanoke County CTSP reduces total crashes 68.2 percent in first three months.

Program Origin

Clearbrook is located in a rural/developmental stretch of the southern portion of the county, which lies between the Roanoke City and Franklin County boundaries.

In October 1986, eight residents of this community formed the Clearbrook Civic League with the primary purpose of working to obtain highway improvements to the local port of U.S. Route 220. The group has grown during its first two years to a membership of more than 200. The group has also diversified to address any issue that could adversely affect the community, such as highway safety, schools, zoning and alcohol licenses.

Administration

The Clearbrook Civic league coordinated the planning for a selective traffic enforcement project using county law enforcement with some assistance from state law enforcement. County and state highway departments were called on to furnish data, and the pursuit of engineering improvement recommendations began. The private sector was brought in to heighten public awareness. The entire program was assisted and monitored by the Department of Motor Vehicles field resource specialist.

The citizen group in the county networked with law enforcement agencies at the county and state level and obtained human and financial resources from the private sector.

A special emphasis was placed on traffic safety student education in the schools.

State and county traffic engineers jointly addressed data analysis, alternative improvements, and future improvement planning. Data reflected driver inattention and speeding as the main causes of crashes.

Emergency Medical Services was involved for data analysis and planning.

Media participated in the awareness campaigns.

All community resources joined in a cooperative, concentrated effort that has led to continuing the relationship for other areas of traffic safety.

Initial participants have also been instrumental in the establishment of a District Traffic Safety Board, which will service a 26 city/county area.

Impact

- Total crashes were reduced by 68.2 percent during the first three months of the program.
- Injury crashes were reduced by 91 percent for the same period.
- Property damage crashes were down 86.7 percent for the same period.

Current Components

Here are some of the elements of the CTSP.

Safety belts:

- A safety belt buckle-up campaign in conjunction with WFIR Radio.
- Child safety seat promotion with public training, mall displays and safety seat checks at day-care facilities.
- Four officers trained at occupant protection workshop to train other officers on enforcing the Occupant Protection Law.
- One officer sent to an out-of-state school (one week) for occupant-protection trainers training.
- Promoting the statewide safety belt law implementation project.

Driving under the influence:

- DUI check points at high incident/accident locations.
- Establishing DUI check point procedure acceptable to courts to increase DUI convictions.
- Programs to obtain alco-sensors, films and other materials for anti-DUI campaigns.

Bicycles:

- Annual seasonal (spring and fall) Bicycle Roadeos open to public in county.
- On-request presentations to school groups, community groups and neighborhood watch groups (average 100 per year).
- Halloween safety project promoting bicycle and pedestrian safety.

Motorcycles:

- Liaison with community college to provide certified instructors for motorcycle driver program.

Pedestrian safety:

- Program for all county day care centers covering pedestrian and general safety.
- Neighborhood program specially designed for driver awareness: Kid Watch.
- Neighborhood program for safety tips for health group walkers and joggers.
- Working to develop program for teenage pedestrian safety (teenagers are statistically prone to pedestrian incidents).

General prevention:

- Program for designated drivers at County Sesquicentennial "Beach Blast" celebration.
- Direct support to high school traffic safety groups: Students Against Drunk Driving (S.A.D.D.). Red Cross Club, Students Concerned About Traffic Safety (S.C.A.T.S.).
- Pre-schoolers Introduction To Traffic Safety (P.I.T.T.S.): program tailored to meet the needs of preschool children.

Coordination

Clearbrook Civic League: The community action group responsible for direction coordination.

Roanoke County Sheriff's Office: Maintains added selective traffic enforcement.

Virginia State Police: Dedicates available enforcement to the hazardous highway location.

Virginia Department of Motor Vehicles: Assists through technical assistance and staffing.

Virginia Department of Transportation: Helps obtain funding for improvements, recommends changes possible and planning assistance for long range future engineering improvements.

Emergency Medical Services: Supplies data and recommendations affecting future improvements.

County School Administration: Assists changes to enhance safer school entrances.

> **WFIR Radio helps push safety-belt buckle-up campaign.**

Parent Teacher Association: Supports changes in student traffic safety education.

County Municipal Administration and County Board of Supervisors: Offers administrative support for engineering improvements.

State legislators: Support engineering improvements generated through the state transportation agency.

AAA and the Regional Safety Council: Provide support, data and technical assistance.

Local business and industry: Help pay for the project and safety promotion materials.

Advertising agencies: Create art work and billboards containing traffic safety messages.

Community Traffic Safety Board: Contributes media and professional technical support.

Local media: Provides public service time to enhance the community awareness of the the project.

Funding

Seed funding of $1,500 was provided by the Department of Motor Vehicles, Comprehensive Community Based Transportation Safety Program. The program generated in-kind donations and services from the Civic League, sheriff's department, local businesses and advertising agencies for $500 (printing billboards) and another $4,000 for billboard labor.

Highway improvement funding was allocated from Virginia Department of Transportation.

The participating groups have established a community and countywide network that is spreading into many other areas affecting traffic safety issues and promoting additional initiatives.

STILLWATER

The City of Stillwater, home of Oklahoma State University, has more than 41,000 permanent residents. However, that population number increases by 22,000 each fall with the beginning of the college year.

There are more than 300 miles of roadway, 26,000 family dwellings and 1,200 commercial businesses. It is the state's sixth largest municipality.

Two state highways run through Stillwater and a spur to a major turnpike connects the city to the eastern part of the state. Virtually all arterial streets are four lanes and are controlled by a recently updated traffic control system. With the beginning of the traditional school semesters the city street system is often used to its limits.

Major Problems

More than 95 percent of the students own or drive vehicles in Stillwater, Parties and socializing are a big part of college life and the young drinking driver is still a major safety problem.

The Stillwater Police Department identified a growing problem with DUI injury collisions. An increasing number of people were being injured by drinking drivers. Fully 65 percent of the alcohol-releated traffic arrests were young people under the age of 25, and the majority of DUI injury crashes were related to this same age group. Collisions and alcohol-related traffic arrests were increasing at rates of 25 percent and 65 percent respectively each year. The problem would have reached uncontrollable propor-

COMMUNITY
ALCOHOL
SAFETY
EFFORT

Stillwater Police Chief Norman McNickle and Officer Bert Franks, coordinator of the Community Alcohol Safety Effort, had reason to be pleased with the results, which included a 30 percent reduction in DUI-related traffic collisions the first year and a 39 percent reduction the second year.

tions if some sort of coordinated effort had not been formulated to combat the drinking driver and to concentrate on traffic safety education.

A major portion of the problem facing the Stillwater community is the drinking driver under the age of 21. More than 30 percent of the alcohol-related traffic arrests are in the under 21 age group. According to Oklahoma law a person must be over 21 to purchase alcohol in any form.

Program Origin

At the request of the Oklahoma Highway Safety Office (OHSO), the Stillwater Police Department analyzed the accident, traffic citation and arrest records for the city prior to 1985. The trends were alarming and a formal proposal was made to OHSO in March of 1985 to fund what would be called the Community Alcohol Safety Effort (CASE) to stop drunk driving in Stillwater.

The Community Alcohol Safety Effort is conducted through the joint efforts of three Stillwater Police Department divisions. The CASE committee and all public education efforts are directed through the office of the CASE coordinator, a uniformed Stillwater police officer, who is assigned to the Staff Services Division. The two alcohol safety officers supported by the grant are supervised by the Patrol Division, while the traffic data analyst is part of the Auxiliary Services Division. All three divisions are in direct contact to coordinate the education, enforcement and analysis functions of the program.

College drivers big problem for Stillwater.

The Community Alcohol Safety Effort committee consists of representatives from education, retailing industry, law enforcement, insurance, counselors and wholesale beverage companies who meet regularly to discuss the progress of the program and to plan regular educational projects related to alcohol safety. The CASE committee also assists in planning, program creation and funding of special programs.

The CASE coordinator is a police officer assigned to oversee the program and the CASE committee. The officer makes all public presentations relating to the program and to the public about traffic safety.

The Stillwater Police Department coordinates all efforts of the project. All reporting, funding and programming are managed through the police department and personnel.

Campaigns

"Teen Safe Driving" recognizes teenage drivers who display proper techniques and courteous driving habits within the community.

"Get Belted in Stillwater" promotes the use of safety belts and child safety seats in all vehicles.

"Designated Driver" is a campaign designed to inform the entire community of an alternative to drunk driving. The CASE committee promotes use of the "designated driver" concept. The campaign urges those who choose to drink to designate a companion to not consume alcohol and drive the rest of the party home safely.

Accomplishments

There was a 30 percent reduction in DUI-related traffic collisions after the first year and a 39 percent reduction in DUI-related collisions the second year.

DUI arrests hit an all time high of 596 in 1985. Increased enforcement yielded a 25 percent reduction in DUI arrests after the second year and another 11 percent reduction after the third year.

Safety belt usage rate went up to 45 percent from only 19 percent.

More than 100 traffic- and/or alcohol-related education programs are presented in the Stillwater community each year.

- More than 6,000 public school students are exposed to regular traffic safety programming each school year.
- More than 10,000 college-aged students see alcohol and traffic safety programs each year.

Traffic Enforcement

Beyond the Oklahoma basic academy training in collision investigation, police officers participate in a mandatory 24-hour collision investigation class plus further experience while in field training. Approximately 80 percent of the commissioned officers are radar certified, enhancing efforts in speed reduction through enforcement. Approximately 300 citations are written every month along with 1,600 warnings.

Specific areas are often targeted for intensive traffic enforcement efforts and specific traffic ordinances are stressed for enforcement. For example, the police department announces the areas of town that will experience increased speed enforcement.

Two full-time commissioned police officers assigned as alcohol safety officers were chosen for their diligence and proven performance in the actual detection and apprehension of DUI drivers. They work all alcohol-related traffic collisions and concentrate the vast majority of their patrol efforts on the apprehension of the drunk driver.

All Stillwater police officers are trained in an intensive 16-hour class on the detection and apprehension of the drunk driver. The community has become acutely aware of the DUI enforcement effort of the police.

Bicycle Safety

With a large college-aged population Stillwater experiences a huge amount of bicycle traffic. Stillwater has designated many miles of bicycle paths and concentrates on the enforcement of bicycle ordinances.

Each year, in conjuncton with the Noon Lions Club, the Stillwater Police Department presents bicycle safety programs to all elementary age school children in the city. At the end of the week a Bicycle Rodeo is held to inspect bicycles and to test bicycle riding skills. Trophies and certificates are given to participating children. Local merchants provide new bicycles to be given away in a drawing. More than 3,000 children are instructed during the program.

Teen Drivers

Patrol officers are instructed to be on the lookout for teenage drivers displaying proper techniques and courteous driving skills. The teen is stopped and given a certificate for exceptional driving, plus a coupon redeemable at a local business. This program is very popular among young drivers in Stillwater.

Record DUI arrests yield to dramatic decrease after start of CTSP.

Local usage is 45 percent and is on the increase with new and more stringent mandatory safety belt statutes. There's a push for increased use of child safety seats and the enforcement of existing child restraint laws. Regular advertisements and public service announcements are made each month to keep awareness high.

Pedestrian safety is of utmost importance in a university community. Stillwater uses the latest technology in crosswalk design and equipment. Stillwater has won pedestrian safety awards for the past six years from AAA. The police department actively and aggressively enforces all pedestrian laws. Programs are presented in schools and to university groups through CASE personnel.

Agency Coordination

The CASE committee involves the whole community in the Stillwater traffic safety effort. All of the following are active participants:

Oklahoma Highway Safety Office
Oklahoma Highway Patrol
Stillwater Police Department
Oklahoma State University
Oklahoma State University Police
Payne County Sheriff's Office
Oklahoma Committee for Safety Belt Use
Noon Lions Club
Oklahoma Crime Prevention Association
Local beverage retailers, including wholesalers and retailers

The funding for the project is through a three-year grant from OHSO for $170,000. The City of Stillwater matches the funding with salaries and equipment. The CASE committee also receives donations and in kind services from local businesses. The entire project will use more than $300,000 dollars during the term of its three-ye [illegible] ntract.

Future Plans

The City of Stillwater has submitted a new grant proposal to the Oklahoma Highway Safety Office to further enhance the existing CASE project. The original CASE concept will continue and the new CASE II concept will build upon the success of the previous project.

CASE II proposes a coordinated attack on the problem of the young, underage drinking driver. Approximately 30 percent of all Stillwater DUI arrests are people under the age of 21. According to Oklahoma statutes these young people should not possess alcohol. The new proposal will combine concentrated enforcement and education efforts. Two police officers will be assigned solely to enforce underage drinking laws and those laws covering taverns and similar establishments.

Education efforts will be coordinated through an officer trained in the Los Angeles Drug Abuse Resistance Education (DARE) concept. This officer will work intimately with public schools and university officials to create and implement new programs to educate the community about the dangers and problems of substance abuse. All these proposals will be in addition to the existing program.

Wimpy Light Trucks Forced To Get Tough

Must meet passenger car standards

BY JIM CASTELLI

THE National Highway Traffic Safety Administration (NHTSA) has issued two new proposed regulations to bring light trucks, minivans and multi-purpose vehicles (LTVs) up to the same safety standards as passenger cars.

One regulation would require the vehicles to use safety belts and air bags. The second would require that their doors be able to withstand the same force as those on passenger cars. NHTSA has already issued final rules requiring head restraints and lap-shoulder safety belts for rear seats and proposed making LTV roofs as strong as those in cars.

"The installation of air bags or automatic safety belts in the front seat of these vehicles could save as many as 2,000 lives a year," says NHTSA Administrator Jerry R. Curry. He said the new regulation on side door strength could save 110 lives a year.

NHTSA proposes phasing in the new crash protection requirement over three years as it did with its rule on crash protection for cars. Under the regulation, 20 percent of the vans, light trucks, multipurpose passenger vehicles and small buses manufactured in the 1994 model year would be required to provide the bags or automatic safety belts. They would be required on 50 percent of the 1995 model vehicles and on all of those manufactured in 1996.

Vehicles that offer a driver's side air bag could have a manual safety belt on the passenger side and still comply with the agency's standard through the 1997 model year.

But manufacturers that don't provide a driver's side air bag would have to install automatic belts for the driver and the front-seat passenger. "We are encouraging air bags as the technology of choice because air bags in combination with existing lap and shoulder belts offer the best protection available," Curry said.

"They are saving thousands of lives and preventing tens of thousands of serious injuries each year," he added. "The same protection should be given to those who choose to buy today's popular minivans and light trucks."

All new passenger cars sold in the United States now must have air bags or automatic belts. Curry said deaths and injuries to light truck riders increased from 6,500 in 1984 to 8,300 in 1988. He said sales of such vehicles have increased sharply during the 1980s and are now about five million a year.

Sen. John Danforth (R, Mo.), ranking Republican on the Senate Commerce Committee and a longtime air bag proponent, said: "Air bag technology has been around since the early 1960s, but only this year did we see large numbers of cars with air bags. We should not go through another long struggle to get air bags into the vehicles now used frequently by families."

The rule would apply to all vans, trucks, buses and multipurpose vehicles with a gross vehicle weight rating of 8,500 pounds and an unloaded vehicle weight of 5,500 pounds or less. It includes motor homes, convertibles, open-body-type vehicles, walk-in van-type trucks and vehicles carrying chassis-mounted campers. NHTSA estimates the changes could cost as much as $440 per vehicle.

Light trucks and passenger cars with only two seating positions would have to be equipped to support a child safety seat on the passenger side. The regulation on side-door impact will apply to trucks, buses or multipurpose vehicles with a gross weight of 10,000 pounds or less. "More and more of these vehicles are being used on the nation's highways, and we believe they should have a higher level of protection in side impact crashes," Curry said.

Since 1973, NHTSA has required that side doors on all new passenger cars be able to resist crushing forces applied by a steel cylinder during a laboratory test. Car manufacturers have generally chosen to meet the standard by reinforcing the side doors with metal beams. NHTSA is now requiring the same testing procedure for light trucks, vans and multipurpose vehicles. Side impacts account for more than one LTV fatality in six, or about 1,600 a year. Non-fatal injuries as a result of side-impact crashes are also increasing. NHTSA says the strengthened door helps make a pole, tree, guardrail or other fixed object slide by the passenger compartment, protecting those inside from injury. NHTSA said the new door standards would add $60 to $70 to the cost of each vehicle.

Random Drug Testing

The Department of Transportation

has instituted random drug testing for up to four million transportation workers, including truckers and transit workers, nationwide. The tests will look for marijuana, cocaine, opiates, amphetamines and phencyclidine (PCP).

Transportation Secretary Samuel Skinner, who is considering the addition of testing for alcohol, has said he expects the drug tests to uncover "alarming" drug use by people responsible for travelers' safety. "If the results that we've received with the military over the last five years are any indication, we'll be able to reduce drug usage, if in fact it occurs, as much as 80 percent," Skinner said on ABC-TV's *Good Morning America*.

He said the military began random drug testing five years ago, "and usage was about 10 percent across the board in the military, and it's down now to less than two percent."

Employee groups, noting that 25,000 random tests on Transportation Department employees found only 0.5 percent positive results, say the random testing is a waste of time and money and an intrusion. The rules also require pre-employment, post-accident, reasonable cause and periodic tests.

"We expect full compliance, even though we still very much disagree with the concept of random testing," said John Mazor, spokesman for the 40,000-member Air Line Pilots Association, which has filed one of more than 20 lawsuits against the new rules.

Skinner said government enforcers will not be out in the initial stages of the testing, but all transportation companies are expected to set up programs. Companies with fewer than 50 employees have an extra year to comply with the new rules.

Transportation Department officials eventually expect half of the work force in safety-related transportation jobs to be tested each year. Congress also is considering whether to enact legislation requiring drug and alcohol testing for transportation workers. But the department is starting the program without legislation.

License Suspension

Federal Highway Administrator Thomas D. Larson has asked a Senate subcommittee to defer action on a proposal to force states to suspend the driver's licenses of convicted drug abusers until more is known about its legal implications.

The bill would withhold a portion of federal highway funds from states that do not pass such laws. Sen. Steve Symms (R, Idaho), called the measure "legalized blackmail" and said it would unduly extend the reach of the federal government. But he later said he was keeping an open mind because of his support for the goals of the bill.

The bill's chief sponsor, Sen. Frank L. Lautenberg (D, N.J.), said the measure would discourage drug use, particularly among young people, and make highways safer. "Driving is a privilege, not a right," Lautenberg said. "And if a citizen chooses to engage in illegal drug behavior, he or she should lose that privilege."

Larson said about half the states already have laws that allow suspension or revocation of driving privileges upon conviction for a drug offense, although most do not make such action mandatory. He said a law that suspends a driver's license for sex offenses was thrown out by the Illinois Supreme Court. Some states have had difficulty tracking down drivers to obtain their suspended licenses, particularly in large urban areas, he added.

"While we support the goals of the program," Larson said, "we believe that more time may be helpful to consider the many complex issues involved."

Lt. Robert Robbins, a New Jersey police officer speaking for the Fraternal Order of Police, said the group supports the bill but has reservations about its possible impact in states where the loss of federal funds might affect money going to police departments. He said rules are needed to prevent this.

New Jersey Attorney General Peter N. Perretti said state officials believe their law that suspends driver's licen-

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Holiday Period Covered	Fatalities	Percent Involving Drunk Driving
New Year's Day Jan. 1	171	58.1
Memorial Day May 27-31	530	48.6
Independence Day July 1-5	630	49.3
Labor Day Sept. 2-6	592	50.6
Thanksgiving Nov. 23-28	601	46.8
Christmas Dec. 23-27	510	50.1
New Year's Eve Dec. 31	159	35.5
Total Holiday	3,193	48.9
Total Non-Holiday	43,900	38.6
Total	47,093	39.3

ses has discouraged drug use among youths and middle-class offenders. "Suspension of a driver's license is the most effective deterrent next to jail," Perretti told the subcommittee.

Alcohol-Related Vehicle Deaths

Motor vehicle crashes accounted for 47,093 deaths in 1988, according to NHTSA. An estimated 18,503 of those deaths (39.3 percent) were alcohol-related; 16,323 drunk drivers and 2,180 drunk pedestrians and bicyclists were killed. Alcohol was likely to be a factor on weekends and holidays. Drunk drivers were involved in 30.4 percent of fatal crashes on weekdays, 50.3 percent during weekends, and 60.3 percent on weekends at night. In addition, 48.9 percent of traffic deaths during the holidays involved drunk drivers, compared to 38.6 percent in non-holiday periods.

In 1988, an estimated 69.8 percent of all night-time fatal motor vehicle crashes involved at least one participant with a detectable blood alcohol concentration, compared with 23.5 percent of daytime crashes. Of all weekend fatal crashes, an estimated 62.4 percent involved a participant with a detectable blood alcohol concentration, compared with 38.9 percent on weekdays.

The accompanying chart shows the number of fatalities and the percentages involving drunk driving for major holiday periods in 1988.

Injury Report

Injury Prevention: Meeting the Challenge is a historic report issued in 1989 by the 31-member National Committee for Injury Prevention and Control. It offers a guide to action for those concerned about injuries.

The report was funded by the National Highway Traffic Safety Administration, the Centers for Disease Control's Division of Injury Epidemiology and Control and the Health Resources and Services Administration's Office of Maternal and Child Health.

The report offers the state-of-the-art on injury prevention of all kinds. The commission concluded that for interventions against injury to be effective they must include three parts: changes in the physical environment to reduce the possibility of injury; education about the risk and responses; and legislation and enforcement to support changes in the environment.

The commission made a number of recommendations concerning traffic safety, including support for safety belt laws, air bags, the 55-mile-per-hour speed limit and motorcycle helmet laws.

On drunk driving, the commission recommended:

- Administrative *per se* license suspensions, in which drivers must immediately surrender their licenses if they refuse to take a alcohol content test or have BAC levels above 0.10.
- Compulsory BAC tests in traffic injury cases.
- Using a BAC level of 0.05 as evidence of impaired driving.
- Further study of using lower BAC levels for teen-agers.
- Further study of the use of sobriety checkpoints.
- Further research on alcohol safety education programs for drunk drivers; the commission said current programs have not been effective.
- Raising state and federal alcohol excise taxes to discourage use.
- Ignition interlock systems, which prevent a driver from starting a vehicle until he or she passes an alcohol-detecting breath test, should be used in addition to, not instead of other programs.
- Localities should require the use of safety belts in taxicabs.

All 50 states should have uniform, comprehensive child safety seat laws that require the seats up through a child's fifth birthday.

- Child safety seat loaner programs, in which hospitals and other organizations lend safety seats to parents, should seats be needed

Red Cross "docu-drama" depicts collision results realistically to get across the dangers of drinking and driving to students in Springfield, Mass.

ONCE UPON A STRETCHER

Horror-story 'docu-drama' helps young people grow up

BY PATRICIA A. DONAHUE

Patricia A. Donahue is director of volunteers and community service for the Pioneer Valley Chapter, American Red Cross, Springfield, Mass.

A LATE-MODEL light-colored car, its front end wrapped around the big maple tree in front of the local high school, holds three boys and three girls. Tests will later prove that the driver of the car, who lost control of the speeding vehicle had a blood alcohol level of .28, well above the legal limit. The other five had been drinking heavily also.

The front middle passenger had been thrown through the windshield and is lying dead on the hood. The right front passenger is alive but trapped and only semi-conscious. She is moaning and obviously in shock, and blood can be seen all around her. Two of the rear passengers are dead and the third is critically injured and will not live through the night.

When the police arrive, the driver is

Students looking on at a docu-drama do seem to be getting the message.

walking around the car, calling to his friends — sometimes laughing, sometimes yelling. He is very belligerent to the police officer who is trying to question him. After failing the field sobriety tests, he is handcuffed, read his rights, and then taken to the local police station.

Meanwhile, at the crash scene, the fire rescue team has arrived as well as the ambulance with two paramedics on board. The "Jaws of Life" tool is used to open the right door and remove the roof of the car, to allow the paramedics to reach those still trapped inside. The injured are removed as quickly as possible, and brought to the nearest hospital.

This Time, a Play

It is a scene that is shocking to read about and even more shocking to witness. What has just been described is not real, but could be and too often is. This time it's a play, or as the Pioneer Valley Chapter of the American Red Cross prefers to call it, a "docu-drama." It's a tool to teach high school juniors and seniors and college students about the tragic consequences of drinking and driving.

The program, which was developed by the Indiana County (Pennsylvania) Chapter of the Red Cross, has been offered by the Pioneer Valley Chapter in Springfield, Massachusetts, since 1987.

For many years, alcohol-education programs have been presented to school students in the form of oral presentations, video/films and discussions. In the past few years organizations doing these presentations have realized that these outreach methods had become outdated and were not really reaching the students in a vital and impactful way.

No alcohol-linked crashes at school events since first 'docu-drama.'

In November 1986, after viewing the video from the Indiana County Chapter, and discussing the program with Sally Zellem, chapter executive director, the Pioneer Valley Chapter decided to offer this program in the Pioneer Valley with the assistance of the Safety Council of Western Massachusetts. Mary M. Kupec, who was the safety council's project coordinator at the time; Barbara M. Giacommetti, then the chairman of volunteers at the Pioneer Valley Chapter; and myself as director of youth programs and community volunteer services, formed the coordination team and began the task of developing the program locally.

Effect on Students

At first the schools were concerned about the effect this program might have on the students. Would it be too graphic for some to deal with? How would they react to seeing their friends in the wrecked car? The team tried to address every one of their concerns. The students who would view this program were not children; they were young adults old enough to drive. Some of the students even felt they were old enough to drink, though the legal drinking age in Massachusetts is 21. With enthusiastic support and cooperation of the mayor, the police and fire departments and the departments of public works in the towns we serve, many schools requested the program. The schools were also attracted by the fact that the Red Cross provides a very well organized group of volunteers to help run the program, as well as all of the necessary equipment and technical assistance.

Expert advice came from such knowledgeable people as George "Buddy" Roy, president of Roy's Towing, who provides the wrecked vehicles and the equipment and manpower necessary to transport them; Dr. Wayne Doss, our make-up and moulage (molding) expert; and Dr. Raymond Conway, director of emergency services at Northampton's Cooley Dickinson Hospital.

'Actors' Nervous

Part of the preparation for the program is the training of the students who will participate. They are all understandably nervous. To perform this type of role in front of their peers is very difficult. Typically, these young "actors" become emotionally involved with the part they are playing. It is the role of the program coordinators to prepare the students psychologically for the emotional impact they will experience during their participation.

They are also shown how the make-up will be applied and given the opportunity to "try it on." Each student is coached, depending on his "injury," on how he should act as the scene is played out.

Once everything is in place on the day of the presentation, the juniors and seniors at the school are called to the auditorium and told that they are about to see a safety play. They are asked to keep in mind that it is not real. They are escorted by their

This scene fortunately is only a re-enactment. The "victim" is a student actor. The car was provided by a towing service.

teachers and the Red Cross volunteers outside to the crash scene where they file past the vehicles for a close-up view. Some will begin to laugh and heckle those that are playing the victims. Much of this laughter is born of nervousness.

After everyone has viewed the wreck, they are positioned in a spot where they can view the scene at a safe distance from the rescue vehicles. The scene is played out exactly as if it were an actual crash. Police, ambulance and fire rescue equipment and personnel arrive in a pre-determined sequence. As the tragedy unfolds, the laughter becomes less and less, and the students may even forget that this is a play. When the injured have been cared for, and the dead have been covered, Dr. Conway begins his presentation.

Scars Remain

He tells the students that he is tired of trying to put them back together day after day. "Only on TV shows are the injured able to be exactly as they were before the collision. Bones don't always heal like new. That deep laceration that begins from the left eyebrow to the right side of the chin will leave a scar." He also gives them a graphic description of what happens during an actual emergency response, the lack of modesty, the cutting away of the clothes by emergency technicians who are total strangers. The screams of their injured or dying friends.

As tragedy unfolds the kids stop laughing.

He goes on to tell them about the calls he must make to the parents of the dead and injured. How he can't tell them what has happened over the phone, that he must ask them to come to the hospital and tell them in person that their son or daughter has died. His description of the pain and sorrow of the parents and the fact that this will be with them for the rest of their lives, has a great impact on the students. He finishes his short talk with a phrase that has become the catch phrase of the program. He asks them to remember one thing: "If you drink and drive, you die."

Following the presentation, the students are asked to write short essays describing what they thought of the program. Approximately 95 percent of the essays received contain thoughts like these:

- "It really opened people's eyes."
- "The only way to improve upon it would be an actual crash with real blood and real bodies."
- "If I was driving and had lived through the crash, I would have no ambition to live, knowing the pain and suffering that I would have caused to the family and loved ones of those individuals."

Is this program successful? The Red Cross thinks so. Since 1987, there has not been an alcohol-related accident at prom, graduation or football time at any of the schools which have experienced this presentation.

EVENTS

Hazmat Coping

MARCH

Hazardous Materials Transportation Training — Mar 6-7, Tampa, Fla; Mar. 21-22, San Mateo, Calif.; Apr. 10-11, Baltimore, Md; Apr. 24-25, West Springfield, Mass. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Advanced Fleet Supervisor — Mar. 6-8, University of Alabama — Motor Fleet Supervisor Training, A364 Engrg. Bldg., Michigan State University, East Lansing, MI 48824. (517) 353-1790.

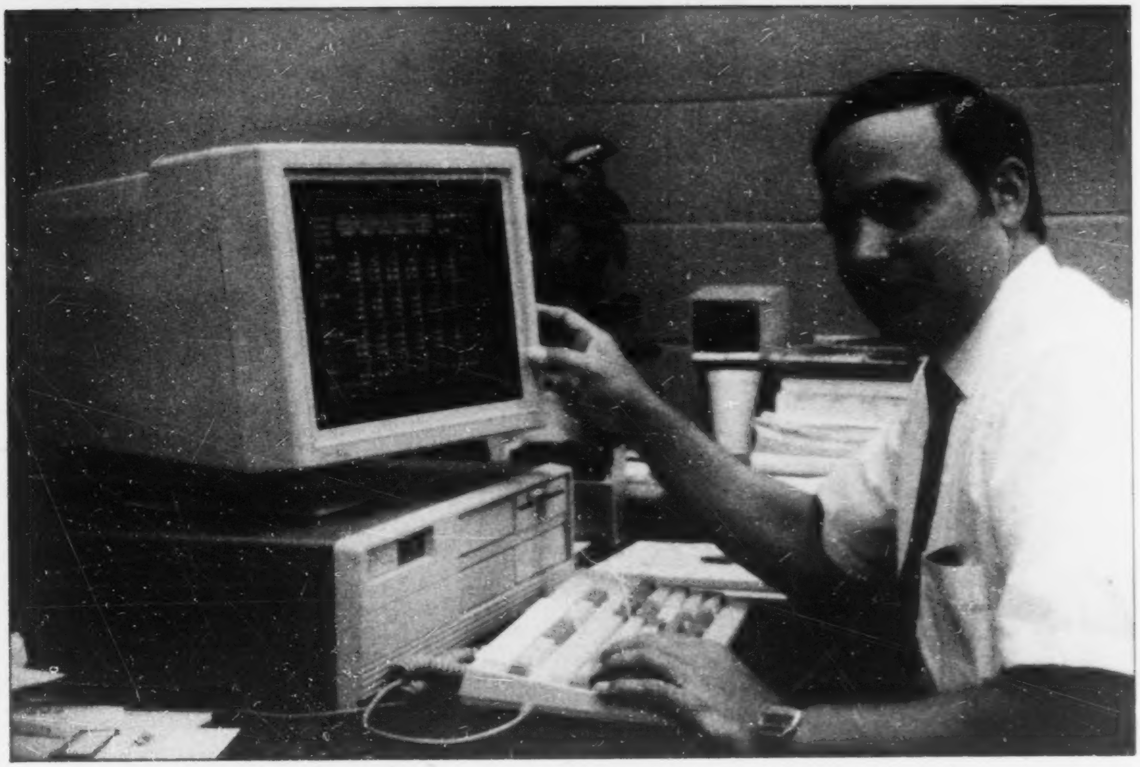
Risk Management: Pursuit Driving Litigation, Liability and Policy — Mar. 9, Little Rock, Ark.; Mar. 16, New Orleans, La; Mar. 23, Oklahoma City, Okla.; Apr. 6, Albuquerque, N.M. — The Southwestern Legal Foundation, Box 830707, Richardson, TX 75083-0707. (214) 690-2376.

Institute of Transportation Engineers Conference — Mar. 11-14, Grove Garden, Calif. ITE, 525 School St., S.W., Ste. 410, Washington, DC 20024-2729. (202) 554-8050.

APRIL

Lifesavers/8 — Apr. 29-May 2, San Diego, Calif. — Lifesavers/8, California Office of Traffic Safety, 7000 Franklin Blvd., Ste. 330, Sacramento, CA 95823. (916) 445-0527.

DDC-8 — Apr. 30-May 2, Chicago, Il. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611 (312) 527-4800, extension 8527.



Using a desktop computer, Dr. David B. Brown of Auburn University takes only seconds to find where crashes are mostly likely to recur in a given community.

KEEPING SCORE LOWERS TOLL

New computer record system quickly highlights death traps

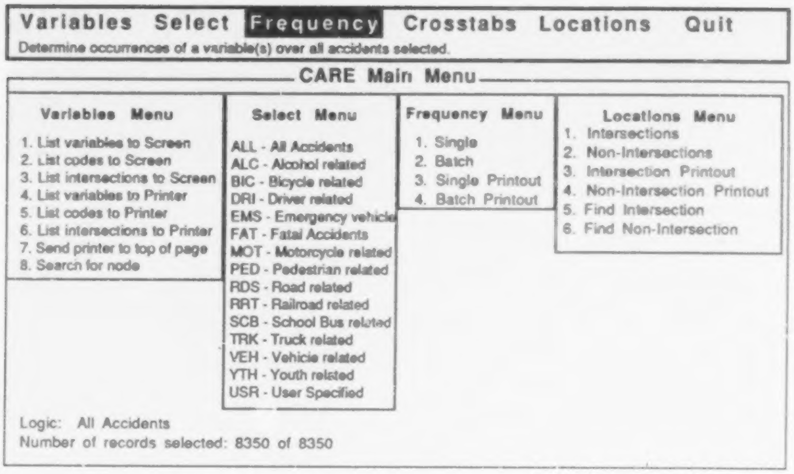
BY DR. DAVID B. BROWN, KEN BRADLEY and DENNIS WELDY

Dr. David B. Brown is interim head of the Computer Science and Engineering Department, College of Engineering, Auburn University. More information about CARE can be obtained from him and his associates, Ken Bradley and Dennis Weldy. Address: 107 Dunstan Hall, Auburn University, AL 36849-5347. Phone: (205) 844- 4330.

THE ONLY benefit that can be derived from a traffic accident is the prevention of similar accidents in the future. This is one reason detailed data are collected for most accidents. But such data are worthless unless they are converted into information that will aid countermeasures. It is with this in mind that traffic-records professionals seek to squeeze every bit of information from their databases.

This article describes a new system that helps traffic safety specialists interact directly with accident data without having to be computer experts. It uses database management software developed specifically for traffic accident records analysis. The system prompts traffic-safety professionals in terms you can understand so you don't have to learn a database language to use it.

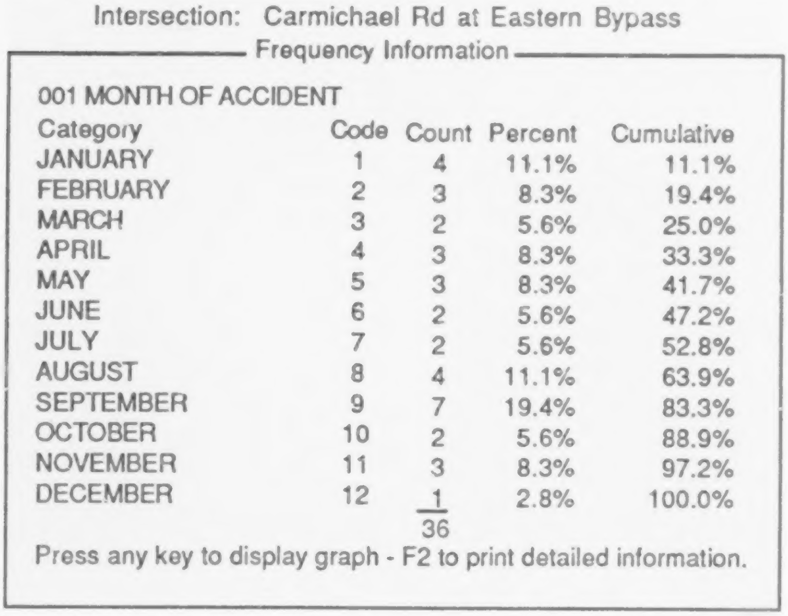
City Accidents RAPID Evaluation (CARE) is a software system developed at Auburn University for the Alabama Traffic Safety Division of the Alabama Department of Economic and Community Affairs (ADECA). CARE is patterned after RAPID (Records Analysis for Problem Identification and Definition). RAPID was developed for statewide accident problem identification and


Variables
Select
Frequency
Crosstabs
Locations
Quit
CARE Main Menu
Variables Menu
1. List variables to Screen
2. List codes to Screen
3. List intersections to Screen
4. List variables to Printer
5. List codes to Printer
6. List intersections to Printer
7. Send printer to top of page
8. Search for node
Select Menu
ALL - All Accidents
ALC - Alcohol related
BIC - Bicycle related
DRI - Driver related
EMS - Emergency vehicle
FAT - Fatal Accidents
MOT - Motorcycle related
PED - Pedestrian related
RDS - Road related
RRT - Railroad related
SCB - School Bus related
TRK - Truck related
VEH - Vehicle related
YTH - Youth related
USR - User Specified
Frequency Menu
1. Single
2. Batch
3. Single Printout
4. Batch Printout
Locations Menu
1. Intersections
2. Non-Intersections
3. Intersection Printout
4. Non-Intersection Printout
5. Find Intersection
6. Find Non-Intersection

```
Determine occurrences of a variable(s) over all accidents selected.

Logic:  All Accidents
Number of records selected: 8350 of 8350
```

Figure 1: Example of CARE window menus.



```
        Intersection:  Carmichael Rd at Eastern Bypass
   ------------------ Frequency Information ------------------
   001 MONTH OF ACCIDENT
   Category              Code  Count  Percent    Cumulative
   JANUARY                 1     4     11.1%        11.1%
   FEBRUARY                2     3      8.3%        19.4%
   MARCH                   3     2      5.6%        25.0%
   APRIL                   4     3      8.3%        33.3%
   MAY                     5     3      8.3%        41.7%
   JUNE                    6     2      5.6%        47.2%
   JULY                    7     2      5.6%        52.8%
   AUGUST                  8     4     11.1%        63.9%
   SEPTEMBER               9     7     19.4%        83.3%
   OCTOBER                10     2      5.6%        88.9%
   NOVEMBER               11     3      8.3%        97.2%
   DECEMBER               12     1      2.8%       100.0%
                                ---
                                36
   Press any key to display graph - F2 to print detailed information.
```

Figure 2: Collision frequency report for a specific location by month.

Cross-tabulations immediately point to danger spots.

evaluation. It has been installed and used by Alabama and several other states. CARE is a microcomputer adaption of RAPID primarily designed for local agencies and officials.

Three Years the Optimum

CARE provides problem identification capabilities for a moderate-size city or county. However, as microcomputer capabilities increase, CARE will soon become applicable to most states on a statewide basis. The stored data normally include the most recent three years of accident information, which is an optimal balance between completeness and timeliness. A longer time may be required in smaller political subdivisions in order to establish the minimum amount of data needed to establish patterns.

CARE operates on PC/MS-DOS-compatible microcomputers with a hard disk. While the capabilities of CARE are quite sophisticated, they can be accessed by merely selecting options from pop-up screens, such as those displayed in Figure 1. The current capabilities of CARE include the ability to:

1. Create a subset of the city's collision records according to logical specification. Examples include pedestrian incidents, alcohol-related fatal accidents or motorcyle crashes involving drivers under age 21. Logical combinations of over a dozen predefined subsets may be formed instantaneously. In addition, the user may define any other subset as a logical combination of variable values.
2. Obtain labeled frequency distributions for any of these subsets. Any or all variables (such as time of day, day of the week, weather, driver age, etc.) may be selected on-line for immediate frequency distribution listing.
3. Graph (histogram) the frequency distributions produced by Item 2.
4. Obtain fully labeled cross-tabulations of any two variables of subsets.
5. Find high collision locations according to user-specified criteria. The interactive nature of this task enables any number of alternative criteria to be tried in order to obtain the number and the type of high collision locations desired. For example, all intersections with multiple pedestrian incidents might be listed.
6. Obtain frequency distributions and cross-tabulations of any two vari-

ables for locations found to be high-collision locations. Or for locations specified by the user.

7. Retrieve collision report numbers for any subset of the collision records or for particular types or locations of collisions.

An Example

Suppose a car injures an eight-year-old boy on his way to school. This incident is recorded on a standardized form by a local police officer. Generally, this "hardcopy" form is sent to a central point in the state for data entry. It, along with thousands of other records, becomes part of the state's collision records database, which is generally stored on some type of computer mass-storage device.

The collision records database described here is generally not constructed with problem identification, evaluation or local area requirements in mind. For instance, the pedestrian's actual age will probably be coded, while age intervals (e.g. 0-4, 5-7, 8-9, 10-15, 16-21, etc.) might be much more useful for problem identification, cross-tabulation and determining over-representations. Also, certain data manipulation might be essential to satisfy the requirements of local problem identification. Subtracting the time of the crash from the ambulance-arrival time would give you the ambulance-delay time.

Collision data can be obtained from the state or entered into the CARE system locally. A program can be developed that reformats the state's data for local use. This new data will be totally compatible with CARE. It is important to note here that CARE can work on any properly formatted database. The arrangement, number or type of variables is totally flexible. Local data entry allows cities or counties to update their data bases as their interests dictate.

Local Databases

To construct a local database, the records for a particular CARE area are selected from the appropriate statewide database, reformatted and downloaded onto the local designated microcomputer. This new subset of data will reside on the microcomputer's hard disk as the CARE Master Data Base. As discussed earlier, three years of data has been found to be an optimal balance between data obsolescence and predictive reliability. For cities in the 20,000 to 40,000 population grouping, this amount of data

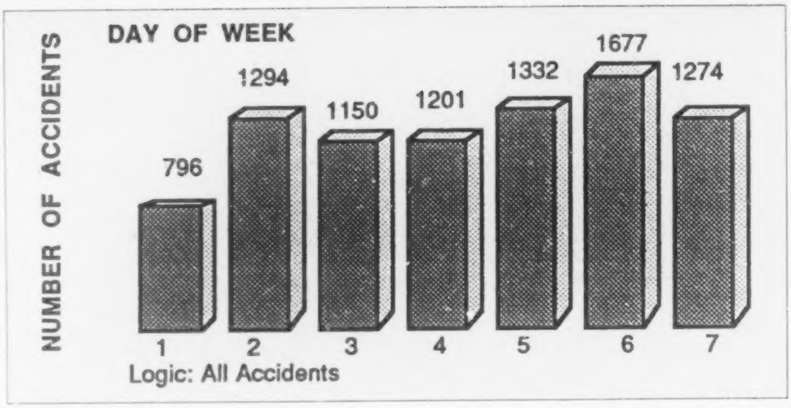
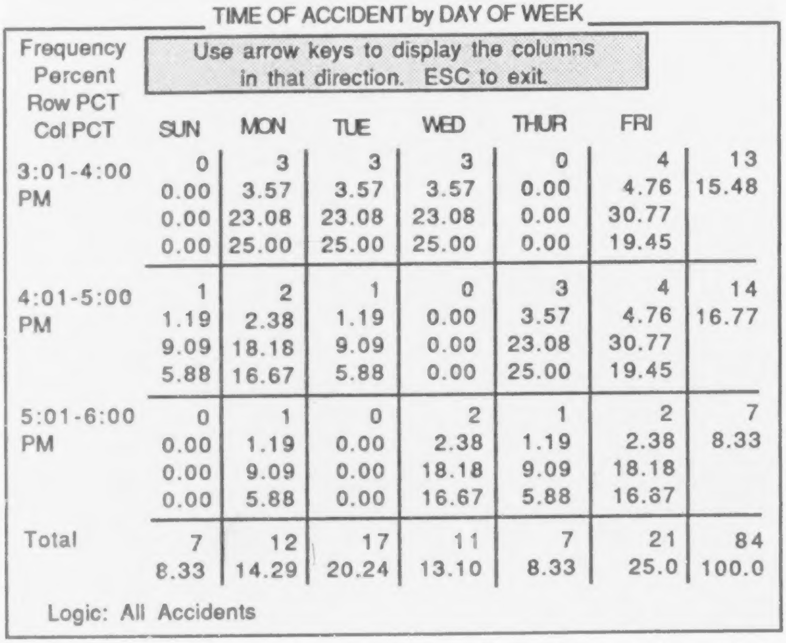


Figure 3: CARE can produce a graph showing total collisions by day of week.



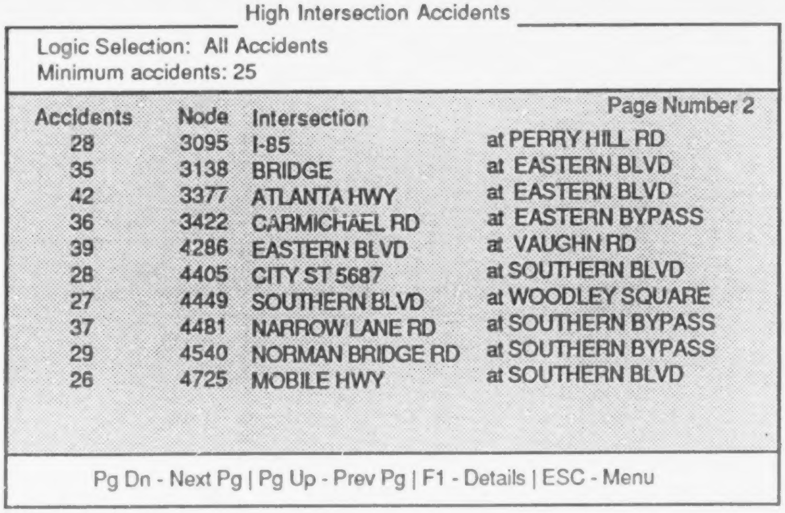
```
TIME OF ACCIDENT by DAY OF WEEK

Frequency   Use arrow keys to display the columns
Percent        in that direction.  ESC to exit.
Row PCT
Col PCT     SUN    MON    TUE    WED    THUR    FRI
3:01-4:00     0      3      3      3      0       4     13
PM         0.00   3.57   3.57   3.57   0.00    4.76  15.48
           0.00  23.08  23.08  23.08   0.00   30.77
           0.00  25.00  25.00  25.00   0.00   19.45
4:01-5:00     1      2      1      0      3       4     14
PM         1.19   2.38   1.19   0.00   3.57    4.76  16.77
           9.09  18.18   9.09   0.00  23.08   30.77
           5.88  16.67   5.88   0.00  25.00   19.45
5:01-6:00     0      1      0      2      1       2      7
PM         0.00   1.19   0.00   2.38   1.19    2.38   8.33
           0.00   9.09   0.00  18.18   9.09   18.18
           0.00   5.88   0.00  16.67   5.88   16.67
Total         7     12     17     11      7      21     84
           8.33  14.29  20.24  13.10   8.33    25.0  100.0

Logic: All Accidents
```

Figure 4: Cross-tabulation combines time of day with day of the week for pedestrian incidents.

Any accident type can be analyzed.



High Intersection Accidents

Logic Selection: All Accidents
Minimum accidents: 25

Page Number 2

Accidents	Node	Intersection	
28	3095	I-85	at PERRY HILL RD
35	3138	BRIDGE	at EASTERN BLVD
42	3377	ATLANTA HWY	at EASTERN BLVD
36	3422	CARMICHAEL RD	at EASTERN BYPASS
39	4286	EASTERN BLVD	at VAUGHN RD
28	4405	CITY ST 5687	at SOUTHERN BLVD
27	4449	SOUTHERN BLVD	at WOODLEY SQUARE
37	4481	NARROW LANE RD	at SOUTHERN BYPASS
29	4540	NORMAN BRIDGE RD	at SOUTHERN BYPASS
26	4725	MOBILE HWY	at SOUTHERN BLVD

Pg Dn - Next Pg | Pg Up - Prev Pg | F1 - Details | ESC - Menu

Figure 5: CARE lists intersections with more than a given number (25) of collisions.

will generally produce from 3,000 to 7,500 records. For larger cities or counties, fewer years of data might be sufficient for problem identification purposes.

Once the download or data entry has been completed, the data are ready for quick processing through any of the CARE processing options:

1. Frequency
2. Cross-tabulation
3. High collision location

If the pedestrian incident, mentioned earlier, caused pressure from parents for an increase in the number of school crossing guards, CARE could determine the age distribution of pedestrians involved in incidents in the area. Cross-tabulations could be performed by such variables as severity, day of the week, sex and pedestrian action. In a few seconds you would know all the specific locations where the seven-to-nine-year-old age group was involved in pedestrian incidents, when and how.

Any accident type can be analyzed. CARE enables the user to produce literally billions of possible outputs.

Menu-Driven

CARE is a totally window/menu driven system. Options appear at the top of the screen with a description of their functions to guide the user to each CARE output. Supplementary documentation is not required, nor is knowledge of computers.

The CARE Main Menu shows how to begin. As the user moves across the submenu titles, the description of the submenu option appears on the screen. The submenu options guide the user to the specific function desired. The Variables option allows you to locate names for the type of information to be processed (Month, Weekday, Time, etc.); the breakdown of the variable into codes (January, February, etc.) and/or the specific location code.

Boolean Searches

With the Select option, you can specify any combination of up to three standard subsets, using any combination of AND/OR (Boolean) logic with the Set Logic Menu. The USR (User Specified) options let you use any combination of variable values to define a new subset. CARE provides virtually instant access to any subset of the collision data.

The Frequency option produces tables and graphs of collision frequency information. Figures 2 and 3 are examples of the tables and graphs, respectively. Figure 2 is a table of collisions occurring at a designated intersection using the variable MONTH OF ACCIDENT. The graph in Figure 3 is for the variable DAY OF WEEK for all collisions (Day 1 is Sunday). While these graphs provide an immediate visual image of over-representations, the tabular outputs are usually of more value for statistical analysis.

The Crosstabs option produces a chart of two desired variables, as depicted in Figure 4. This cross-tabulation is of TIME OF ACCIDENT by DAY OF WEEK for pedestrian incidents. This might be of use for the example cited, or the crosstab could be further restricted to a particular range of ages. If the crosstab does not fit on the screen, cursor control arrows may be used to scroll to the desired area of the output. Cells with frequencies above their expected average values are highlighted in orange, while those with significant over-representations are highlighted in red (on color monitors).

The Locations option produces information on specific intersections or segments. The objective is to identify hazardous locations that need immediate attention. The user defines the minimum number of collisions for a location to qualify and receives a listing of those locations. Figure 5 shows the output for intersection collisions. A similar output is available for non-intersections, where two intersections define the segment.

By selecting the Details option, you can generate frequency tables, graphs, cross-tabulations and specific collision numbers for any of the locations listed. Figure 2 shows a typical frequency table (for Carmichael Road at Eastern Bypass). This output was generated by selecting this location from the output given in Figure 5. Work is currently underway to establish a collision diagram module that could be invoked at this point as well.

CARE was created to enable traffic safety professionals to use the power of the computer with minimum fuss to get on with the job of preventing crashes and saving lives.

Yong Kim of the Illinois Department of Transportation welcomes a citizen to a non-confrontational presentation of a proposed project. IDOT now uses a friendly "open house" type of meeting instead of traditional public hearings.

CULTIVATING THE GRASSROOTS

How to avoid boos at public hearings

BY MORENE DUNN

TRAFFIC SAFETY professionals often have to sell the public on programs that involve public hearings or town meetings. There are techniques that can help make it easier, as the Illinois Department of Transportation (IDOT) has learned.

IDOT is responsible for maintenance of every kind of thoroughfare from elegant shopping avenues to busy freeways to country roads, plus bridges and interchanges. Because of its widespread impact — IDOT activities affect virtually every resident of the state — the agency wanted not only to explain how road projects and repairs are conducted, but improve communications and understanding with sincerity and professionalism.

With any new project (widening a road, creating an underpass), come benefits for some, offset by negative effects on others through more traffic, congestion or collisions. These concerns are aired in public hearings, which can be rocky roads for IDOT.

In the past, the agency would conduct these hearings before large groups, up to 400 people. Meetings were always held in the evening and could last until well after midnight. IDOT would set the agenda and lead the discussion, then give the public a chance to respond.

Hostile Audiences

According to Richard Adorjan, director of public affairs for IDOT, said: "The people most likely to attend public hearings are often angry; they're there because they have a thorn in their side. Generally, just to express a moderate opinion, people are not motivated to talk before a whole group. Usually those who are the most upset are heard from. They can tend to incite the crowd. This can turn into a one-against-400 situation."

IDOT called upon Communispond, Inc., a nationwide business communications consulting firm, for help with improving its public information program. Communispond worked with IDOT to set these goals:

Goals

1. Counter negative perceptions (such as, "the government doesn't care about us").
2. Convey a sense of rapport (government employees are members of affected communities, too).
3. Develop a professional but non-bureaucratic style (talk in terms the public understands).
4. Establish a conversation (rather than a confrontation).
5. Move the meeting to a conclusion where everyone there comes out a winner.

During its two-day training for IDOT, Communispond both honed IDOT staffers' presentation skills and offered practical advice.

For starters, changing the time of the meetings was suggested. "IDOT started its public hearings at 7:30 p.m. and stayed until the end," according to Dan MacLean, Communispond senior associate. "Audience members were tired and resentful of giving up their free time. IDOT personnel were not at their peak after a full day either."

Now public hearings start at 2 p.m. and end at 8 p.m. This allows smaller, one-on-one dialogues.

Like Open House

Yong Kim, IDOT in-house project unit head, explained: "Now we see a steady group of people throughout the six-hour public hearings. Homemakers and businessmen with flex hours come during the day. We are able to spend time with each person in a friendly atmosphere. It is like an open house."

After viewing a continuously running audio/visual program, the public enters the meeting room where visual materials are displayed. An IDOT staffer answers any questions they have.

MacLean explained: "We observed several public hearings. IDOT personnel presented plans in depth and answered in great detail questions of environmental impact, effects on wildlife or other ramifications of the transportation project. But they were covering an overwhelming amount of information."

A citizen pointed out he's a person, not a 'receptor.'

The preliminary A/V show cut down the number of IDOT charts, maps, graphs and blueprints, which most of the public couldn't understand. They were not really necessary. If information seems incomplete in a A/V presentation, IDOT staffers can support or clarify it.

Eye Contact

"IDOT staff were freed from 'talking to the visuals' by a 'touch, turn, talk' drill, which automatically makes them address the questioner. That eye contact gets and holds interest, even in large groups," MacLean said.

Kim said the only problem with the new hours, which create more one-on-one discussions, is that he and the other IDOT staffers have to answer some of the same questions over and over. He added: "With such a friendly atmosphere, we don't mind."

For the situations where IDOT still addresses large groups, agency representatives were taught to pick out individuals in various segments of the auditorium or hall to focus their eyes on; then, as they speak, to look at those chosen and talk directly to them."

"Strong eye contact conveys the fact speakers are being straightforward, honest and non-confrontational," MacLean explained. "It helps IDOT speakers gain the cooperation of the people who have come to the meeting expecting bad news and looking for any evidence the agency is hiding something from them."

No Tech Talk

Although IDOT spokespersons are very knowledgeable, they were instructed to leave technical terms the public doesn't understand back at the office. A term like "signalized intersection" became "a corner with a stoplight." "Channelize a stream" became "straighten a curving creek."

At one meeting an IDOT representative used the term "receptor" to indicate a person, which caused an audience member to jump up and remind IDOT forcefully that he was "a person, not a 'receptor!'"

During training, heavy emphasis was placed on handling questions, particularly emotion-laden ones regarding personal safety, noise, displacement and property values. IDOT staff worked on responses that were both professional and humane.

Restate Questions

Kim found particularly useful the "buying thinking time" approach. "I restate questions the way we want them heard and then answer the questions in a way that reinforces the information we want the public to understand," he explained.

Almost 100 IDOT personnel received presentation-skills, training, including each of the nine district engineers, the top executives of the agency and their bureau chiefs. At the completion of the program, selected IDOT staff received additional training in a "Train the Trainer" program. Those staffers now train other IDOT spokespersons.

"Since the training, the hostility may not have been completely eliminated, but our response to that hostility has helped bridge the gap between big government and human beings," Adorjan said.

Down-To-Earth Barrier

BEACONS

Offered are the Edwards 99 Series 12V DC light-duty strobe lights — designed for vehicle applications. The small AdaptaBeacon portable strobe comes with a magnetic base for temporary mounting on dash or vehicle roof.

This product also has a six-foot cord with a cigarette lighter plug-in adapter and a vinyl hood for driver comfort. The unit also is supplied with a steel disc assembly for vehicles with non-metallic dashboards. Lexan® lenses are available in amber, red, blue, green, magenta and clear. — **Edwards Company, Signaling Products Division**, Department J, 195 Farmington Ave., Farmington, CT 06032.

HIGHWAY BARRIER

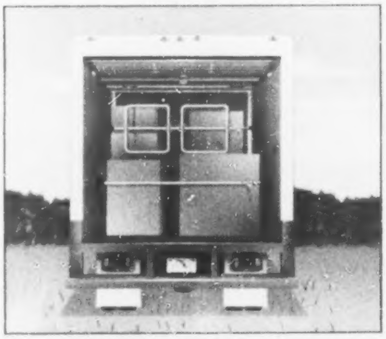
This highway barrier, recently introduced by this corporation, consists of two parallel ribbons of corrugated steel filled with sand or other granular material. There are two models: the Mark 7, which is 46 inches by 44 inches wide, and the Mark 9, which is 31 inches high and 34 inches wide. Because they are not curve-shaped, like the predominantly used New Jersey concrete barrier, vehicles are not inclined to become airborne and flip when they run into one.

Independent tests between International Barrier Corporation and New Jersey barriers have consistently shown the former to be much more effective in successfully redirecting cars, buses and trucks that collide with the barrier. — **International Barrier Corporation**, 10 Lower Spadina Ave., Suite 303, Toronto, Ontario-Canada, M5V 2Z2.

DUI PREVENTION

Introduced is the Guardian Interlock System™, which connects a breath analyzer to a vehicle's electrical system. Once installed, the driver must blow into the interlock before starting the vehicle.

To deter all but the intended driver from using the system, each driver is required to use a breath code (a series of long and short breaths) for this process. If the interlock senses a BAC (blood alcohol concentration) level above a preset level (usually .02 percent) the vehicle will not start. — **Guardian Technologies, Inc.**, 5200 Fields-Ertel Rd., Cincinnati, 45249.



LOAD RESTRAINTS

Made available are LoadBloks, new friction-type load restraints for use in all sizes of trucks, trailers and railcars.

LoadBloks are offered in two steel models and two aluminum models. Minimum length for all models is six feet, three inches and shaft lengths either are three feet or six feet. Aluminum LoadBloks are designed for refrigerated vehicles and specifically recommended for cold storage flowers, produce and plants as well as storage of wet freight and baked goods.

Accessory loops for use with aluminum LoadBloks spread the effective area of restraint and can be added or removed quickly. Steel models restrain heavier freight such as glass bottles, steel drums, rolls of paper and boxed merchandise. LoadBloks are usually used in pairs. They are made to give years of rugged, dependable service. — **Equipment Company of America**, 1075 Hialeah Dr., Hialeah, FL 33010.

TRAFFIC PAINT

This manufacturer has expanded its range of highway pavement marking products to include MetroMark™ copolymer striping compound.

The solvent-free marking material provides up to eight times the service life of paint, yet highway departments and maintenance contractors can apply MetroMark with their own paint equipment and crews.

The copolymer formulation rapidly bonds with the silicates contained in concrete and reflective glass beads, and forms a permanent monolithic bond with asphalt. Metromark is designed to achieve a non-shrinking , track-free cure in as little as 60 seconds, which elminates coning and permits short, efficient convoys.

When totally cured, MetroMark produces a flexible 17,000 psi compressive load strength bond that is impervious to road contaminants, moisture and temperature extremes. — **Stimsonite Products**, Amerace Corporation, 7542 N. Natchez Ave., Niles, IL 60648.

NOISE CONTROL

Acoustical materials designed to solve the problems frequently found in off-highway vehicles.

Cabfoam is used as a headliner or side panel. Soundmat FVP is an acoustical floor matting and Soundcoat's vibration damping material, GP-1, is used for inside hoods and panels.

This company has provided noise control solutions and materials for all types of equipment in every industry from ships to aerospace to office machinery, proven in the field and in the laboratory. — **Soundcoat Company, Inc.**, 1 Burt Dr., Deer Park, NY 11729-5701.

LIBRARY

Nader Strikes Again

Please Note: Library *is prepared by the National Safety Council Library — Robert Maracek, manager. The National Safety Council Library is unable to supply any of the materials listed here. For your convenience, the names and addresses of the publishers are listed.*

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October Traffic Deaths Down 4%

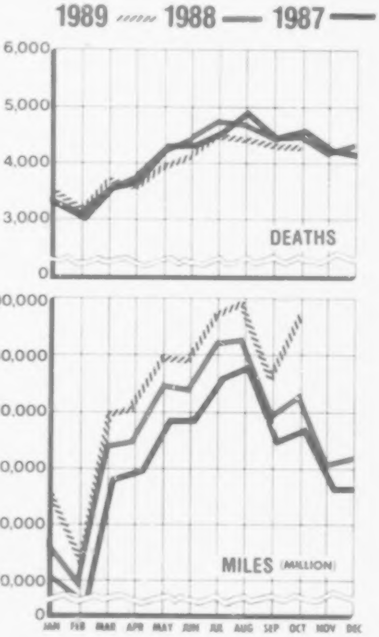
BY MARY E. JOHNSTON and URSULA ZUEHLKE

TRAFFIC SUMMARY

Month	Deaths 1989	Deaths 1988	Change
October	4,320	4,500	−4%
10 months	39,170	40,580	−4%
12 months	47,590	48,850	−3%

(Ending October, 1989)

MONTHLY MOTOR-VEHICLE DEATHS AND TRAFFIC TRENDS



MOTOR-VEHICLE deaths in October totaled 4,320, a decrease of four per cent from the October 1988 total of 4,500.

Deaths for the first 10 months of 1989 totaled 39,170, a decrease of four percent from the 1988 10-month total of 40,580.

Deaths for the 12-month period ending October totaled 47,590.

Disabling injuries for the first ten months of this year are estimated to be about 1,400,000. These are injuries resulting in disability beyond the day of the collision, and do not include minor injuries, which probably totaled as many more.

The cost of motor-vehicle collisions for the first ten months of this year is estimated at about $57 billion.

Based on preliminary vehicle mileage reports for this year, the estimated mileage death rate for the entire year is 2.4 (deaths per 100 million vehicle miles).

State Experience

Among the 45 states reporting October experience, 25 states had fewer deaths than in the preceding October, and 18 states and the District of Columbia showed increases in deaths. Two states showed no change in the number of fatalities. For the first 10 months, 30 states showed decreases in the number of deaths, while 14 states and the District of Columbia showed increases. One state showed no change in fatalities.

Rhode Island	−21%
Wyoming	−19%
New Jersey	−17%
Idaho	−15%
Tennessee	−15%
Maine	−14%
Kansas	−12%
Indiana	−10%
Vermont	−10%
Alabama	−9%
Illinois	−9%
Louisiana	−9%
Arizona	−7%
Minnesota	−7%
Hawaii	−6%
Kentucky	−6%
Oregon	−6%
South Carolina	−6%
Massachusetts	−5%
Michigan	−5%
North Carolina	−5%
Virginia	−5%
Iowa	−4%
Maryland	−4%
Missouri	−4%
Ohio	−3%
Washington	−3%
Utah	−2%
Wisconsin	−2%
Florida	−1%

Traffic Deaths By State

Deaths are reported by state traffic authorities. All figures are preliminary. To insure proper comparisons, 1987 and 1988 figures cover the same reporting period as those for 1989.

Population Rate: U.S. population rate is the estimated annual number of deaths per 100,000 population, assuming that deaths for the rest of the year will follow the normal seasonal pattern. State population rate is the estimated annual number of deaths per 100,000 population, assuming that the monthly average of deaths will remain at the present average for the rest of the year. U.S. population rate is based on July 1, 1989, population estimate; state population rates are based on July 1, 1988, population estimates, U.S. Bureau of Census, Washington, D.C.

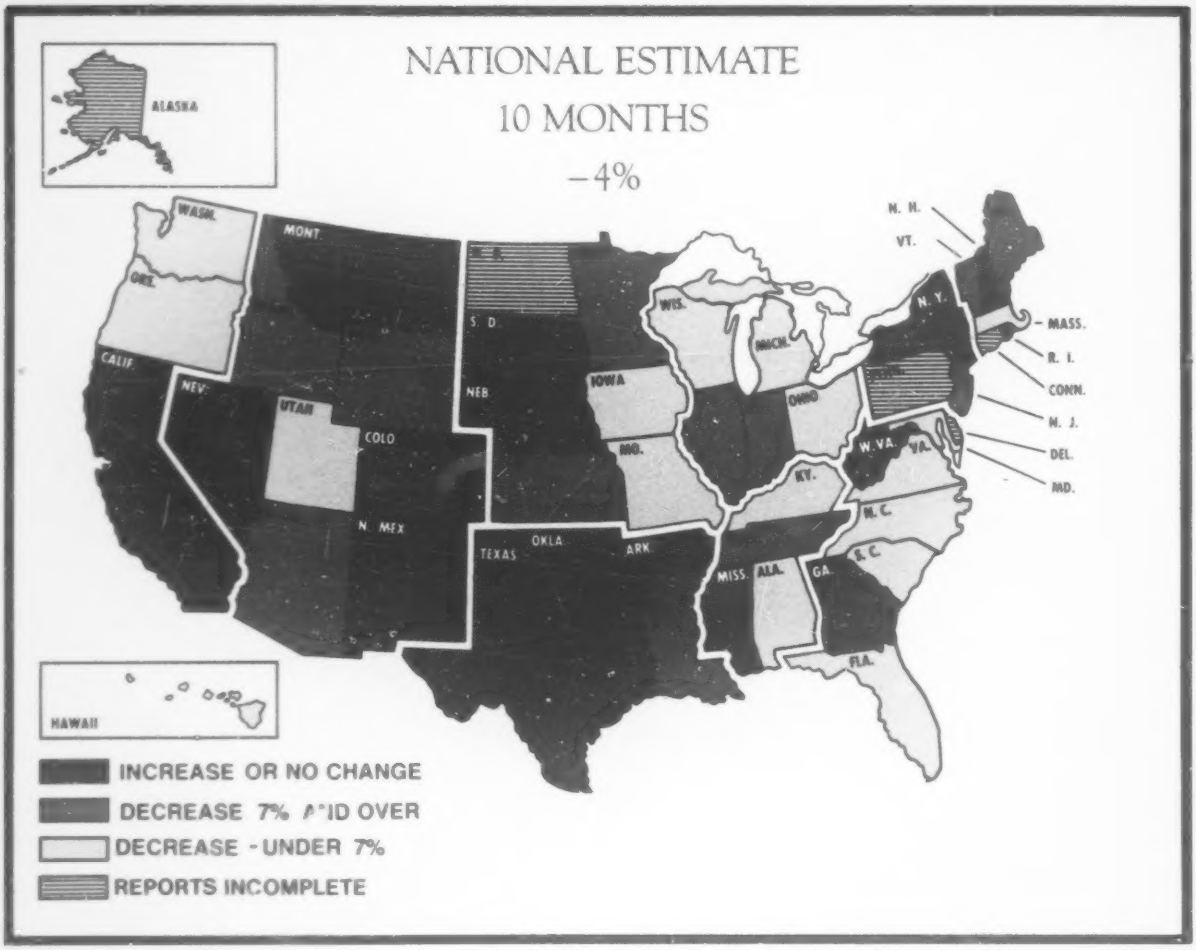
States shown in CAPS have improved in 1989 compared with 1988.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

STATE NAME	MONTHS REPORTED	DEATHS IDENTICAL PERIODS 1989	1988	1987	PERCENT CHANGES 1988 TO 1989	1987 TO 1989	1989 POP. RATE	1989 MILE. RATE
Total U.S.	**10**	**39,170**	**40,580**	**40,130**	**- 4%**	**- 2%**	**19.3**	**2.4**
ALABAMA	10	834	837	921	- *%	- 9%	24.5	2.7
Alaska	9	58	69	56	-16%	+ 4%	14.7	1.7
ARIZONA	10	715	765	751	- 7%	- 5%	25.3	2.7
Arkansas	10	531	494	511	+ 7%	+ 4%	26.7	3.3
California	10	4,295	4,151	4,390	+ 3%	- 2%	18.6	2.2
Colorado	10	448	418	491	+ 7%	- 9%	16.3	1.9
Connecticut	8	252	305	270	-17%	- 7%	11.8	1.3
Delaware	8	72	115	95	-37%	-24%	16.8	1.7
D. of C.	10	68	53	44	+28%	+55%	13.1	2.4
FLORIDA	10	2,501	2,538	2,319	- 1%	+ 8%	25.0	2.8
Georgia	10	1,326	1,309	1,234	+ 1%	+ 7%	25.6	2.5
HAWAII	10	119	127	112	- 6%	+ 6%	13.2	1.9
IDAHO	10	197	233	219	-15%	-10%	23.7	2.6
ILLINOIS	10	1,400	1,543	1,361	- 9%	+ 3%	14.5	2.1
INDIANA	10	796	885	910	-10%	-13%	17.3	2.2
IOWA	10	433	452	404	- 4%	+ 7%	18.3	2.3
KANSAS	10	346	394	401	-12%	-14%	16.8	1.8
KENTUCKY	10	646	690	673	- 6%	- 4%	20.8	2.3
LOUISIANA	10	657	725	664	- 9%	- 1%	17.7	2.7
MAINE	10	171	198	193	-14%	-11%	17.3	1.7
MARYLAND	10	619	646	679	- 4%	- 9%	16.4	2.0
MASSACHUSETTS	10	549	576	543	- 5%	+ 1%	11.3	1.5
MICHIGAN	10	1,320	1,393	1,305	- 5%	+ 1%	17.2	2.0
MINNESOTA	10	481	515	438	- 7%	+10%	13.6	1.4
Mississippi	10	587	566	622	+ 4%	- 6%	26.8	3.1
MISSOURI	10	854	893	882	- 4%	- 3%	20.1	2.2
Montana	10	156	156	192	0%	-19%	23.1	2.2
Nebraska	10	242	225	246	+ 8%	- 2%	18.2	2.0
Nevada	10	252	239	230	+ 5%	+10%	30.0	3.1
New Hampshire	10	158	137	151	+15%	+ 5%	17.9	1.9
NEW JERSEY	10	707	854	808	-17%	-13%	11.1	1.4
New Mexico	10	441	421	484	+ 5%	- 9%	35.3	3.2
New York	10	1,763	1,724	1,840	+ 2%	- 4%	11.9	2.2
NORTH CAROLINA	10	1,229	1,289	1,312	- 5%	- 6%	23.0	2.3
North Dakota	9	52	80	75	-35%	-31%	10.3	1.1
OHIO	10	1,356	1,395	1,367	- 3%	- 1%	15.1	2.0
Oklahoma	10	550	541	485	+ 2%	+13%	20.2	2.1
OREGON	10	519	553	505	- 6%	+ 3%	22.9	2.8
Pennsylvania	8	1,213	1,135	1,221	+ 7%	- 1%	15.2	2.1
RHODE ISLAND	10	85	107	84	-21%	+ 1%	10.3	1.7
SOUTH CAROLINA	10	812	865	908	- 6%	-11%	28.4	2.7
South Dakota	10	134	115	114	+17%	+18%	22.7	2.4
TENNESSEE	10	879	1,037	986	-15%	-11%	21.7	2.5
Texas	10	2,758	2,754	2,604	+ *%	+ 4%	19.7	2.1
UTAH	10	257	263	261	- 2%	- 2%	18.4	2.4
VERMONT	10	89	99	101	-10%	-12%	19.5	1.9
VIRGINIA	10	838	881	856	- 5%	- 2%	17.0	1.7
WASHINGTON	10	631	652	648	- 3%	- 3%	16.7	1.9
West Virginia	10	390	383	402	+ 2%	- 3%	24.7	3.1
WISCONSIN	10	677	693	672	- 2%	+ 1%	16.9	1.8
WYOMING	10	104	128	106	-19%	- 2%	25.5	2.1
Puerto Rico[#]	10	386	476	501	-19%	-23%	17.0	—
Virgin Islands[#]	10	7	15	12	-53%	-42%	15.1	—
— CANADIAN PROVINCES —								
Alberta	10	398	384	420	+ 4%	- 5%	30.2	
British Columbia	9	408	417	402	- 2%	+ 1%	25.7	

[#] Not included in the TOTAL U.S. death count or rates.

*Less than 0.5%.


NATIONAL ESTIMATE
10 MONTHS
–4%

ALASKA
HAWAII
WASH.
ORE.
CALIF.
NEV.
MONT.
UTAH
COLO.
N. MEX
S. D.
NEB.
TEXAS
OKLA.
ARK.
IOWA
MO.
WIS.
MICH.
OHIO
KY.
MISS.
ALA.
GA.
S.C.
N.C.
FLA.
W. VA.
VA.
N. Y.
N. H.
VT.
MASS.
R. I.
CONN.
N. J.
DEL.
MD.
INCREASE OR NO CHANGE
DECREASE 7% AND OVER
DECREASE - UNDER 7%
REPORTS INCOMPLETE

MOTOR-VEHICLE DEATHS AND CHANGES TOTAL U.S.

Month	Deaths				Percentage Changes				
					Corresponding Month			4 Months Moving Avg. +	
	1986	1987	1988	1989	1987-1989	1987-1988	1988-1989	1987-1988	1988-1989
January	3,274	3,230	3,310	3,450	+ 7%		+ 4%		+ 2%
February	2,814	3,000	3,130	3,150	+ 5%		+ 1%		+ 2%
March	3,559	3,520	3,610	3,640	+ 3%		+ 1%		+ 4%
April	3,607	3,580	3,720	3,500	– 2%		– 6%		– *%
May	4,331	4,270	4,220	3,870	– 9%		– 8%		– 4%
June	4,460	4,280	4,320	4,080	– 5%		– 6%		– 5%
July	4,704	4,470	4,710	4,440	– 1%		– 6%		– 6%
August	4,895	4,880	4,610	4,390	–10%		– 5%		– 6%
September	4,197	4,380	4,450	4,330	– 1%		– 3%		– 5%
October	4,244	4,520	4,500	4,320	– 4%		– 4%		– 4%
10 Months	40,085	40,130	40,580	39,170	– 2%		– 4%		
November	3,920	4,200	4,010			– 5%		– 2%	
December	3,860	4,070	4,410			+ 8%		+ 1%	
TOTAL	47,865	48,400	49,000	47,590[1]		+ 1%			

The 1986 figures are from the National Center for Health Statistics. The 1987, 1988, and 1989 figures are National Safety Council estimates.

The 1989 national estimate is arrived at by assuming that the percentage change from 1988 to 1989 in the states reporting for both years reflects the 1988-1989 change in the entire country. First reports are preliminary, so revisions are made from time to time as later reports are received for the various months. Thus, figures here for 1989 may differ slightly from figures for the same months that will be published in future issues of TRAFFIC SAFETY.

+ Four Months Moving Average is based on changes between the totals for four months instead of one month. For example, the October figure shows the change between the totals for July-October 1988 and July-October 1989, etc. Adding several months together tends to smooth out single month changes, which may be affected by differences in the number of weekends in a month from one year to the next, random variations, etc.

[1] Deaths for the 12-month period ending October 1989.

* Less than 0.5%.

CONFERENCE ANNOUNCEMENT

INFORMATION SYSTEMS FOR HIGHWAY SAFETY:

16th International Forum on Traffic Records Systems

JULY 16-19, 1990

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- DUI studies
- accident location systems
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For more information—and to receive your registration packet, please complete the form below and mail it to the address indicated. Don't wait. Make your plans to attend TODAY!

Only those persons/organizations returning this form will receive additional information on this important forum.

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____

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NATIONAL SAFETY COUNCIL
444 N. Michigan Ave.
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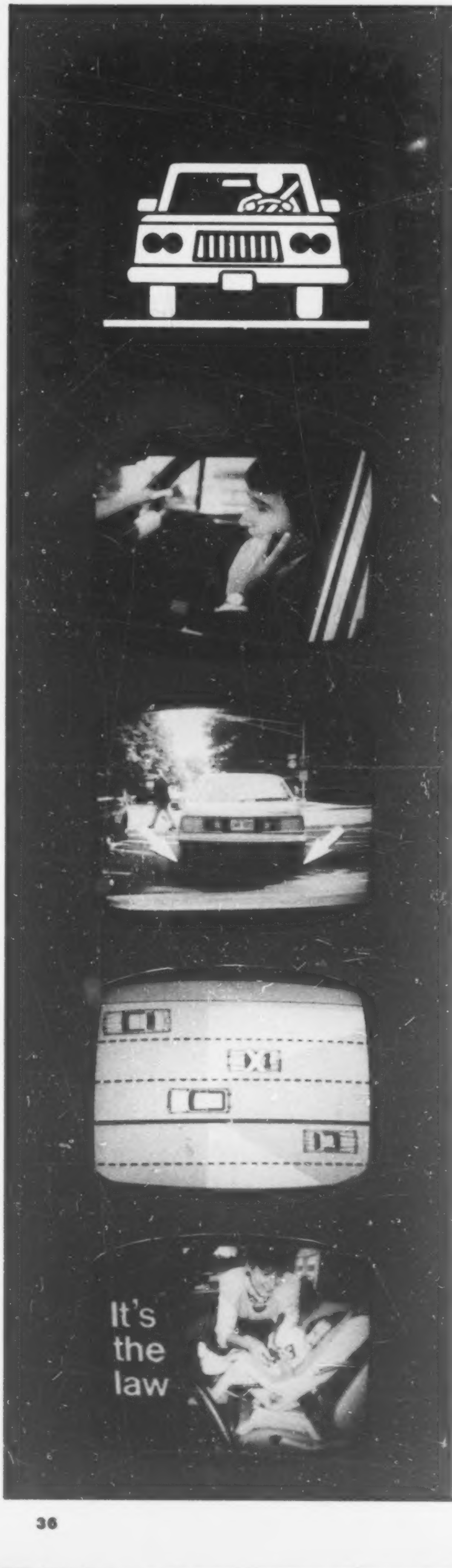
CALL (312) 527-4800, ext. 8405 and ask for Ted Dudzik



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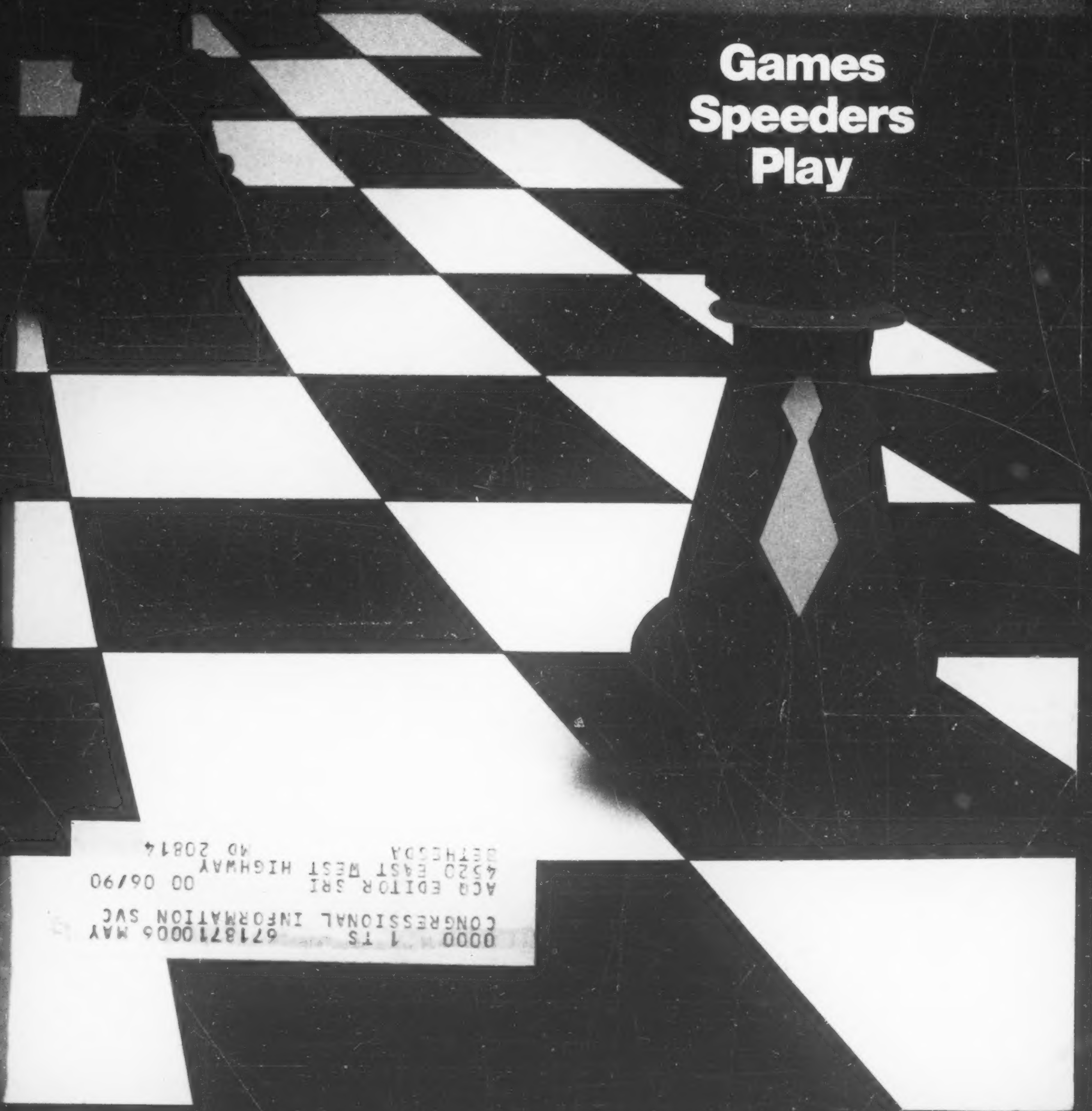

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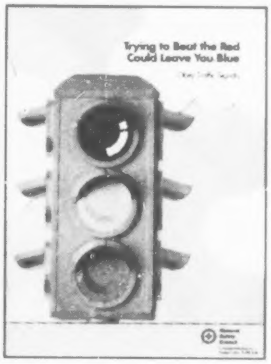
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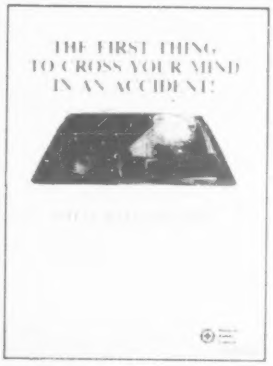
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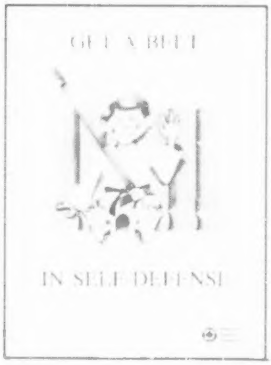
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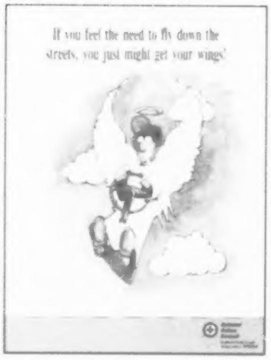
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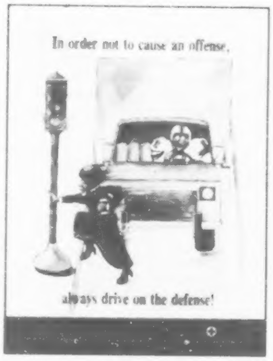
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Publisher: Kevin H. Axe (312) 527-4800, ext. 7101

Editorial Director: Maureen Glass (312) 527-4800, ext. 7103

Coordinator: Richard Frisbie

Associate Editor: James W. Lahey

Art Director: Anne F. Malone

Cover: Constructs Studio, art, Terry Vitacco, photo

Director, Publications Marketing: Kevin Shanley, (312) 527-4800, ext. 7401

Advisors

Noel Bufe, Ph.D., *director, Traffic Institute, Northwestern University, Evanston, Ill., vice president for traffic*, Walter D. Weiss, *group director of safety, Leaseway Transportation Corp., Birmingham, Mich., vice president for motor transportation*; Neil Boot, *director, driver improvement programs*, Ted E. Dudzik, *traffic law enforcement and police records specialist*, Jan Hazlett, *school transportation safety specialist*, Tim Kennedy, *occupant restraint specialist*; Al Lauersdorf, *alcohol programs administrator*, John McCarthy, *manager, program development and training, driver improvement programs*; Harold Thompson, *manager, highway traffic safety services*; Lester B. Sokolowski, *director, motor transportation*, James Solomon, *administrator of training, driver improvement programs*; Richard L. Tippie, *director, transportation safety*.

TRAFFIC SAFETY (ISSN 0041-0721) is published bimonthly by the NATIONAL SAFETY COUNCIL, 444 N. Michigan Ave., Chicago, Ill. 60611. Copyright © 1990 by National Safety Council. Printed in U.S.A. Second Class postage paid at Chicago, Ill. and at additional offices. POSTMASTER: Send address changes to National Safety Council, 444 N. Michigan Ave., Chicago, Ill. 60611.

U.S. Subscription rate: $15.20 to members of the National Safety Council; $18.98 to non-members. Quantity and foreign rates available on request.

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May/June 1990

National Safety Council

TRAFFIC SAFETY

Vol. 90 No. 3

THE ALL-TOO-USUAL 8
AL LAUERSDORF
Training alcohol servers not to pour themselves a headache

POLICE PARADOX 12
THOMAS FRISBIE
Cops contribute to traffic dangers while protecting public

GAMES SPEEDERS PLAY 16
MICHAEL MALONE
Detecting detector detectors

'FUNNY' DRUNKS ON THE ROCKS 20
MAURICE J. HANNIGAN
Public attitude turns serious on drunken driving

THE 21st CENTURY BEGINS TO ROLL 22
JIM CASTELLI
Feds will let the states pay the toll

CARS CAN REVERSE DRUNK DRIVERS 24
Engine starts only for sober driver

4 Two-Way Street
6 Today's Traffic
19 Events
28 Survey
29 New Products
30 Library
31 Shortcuts
32 Statistics

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Home Office, 444 N. Michigan Ave., Chicago 60611, (312) 527-4800

Printed in U.S.A.

Stock No. 311.03-030

TWO-WAY STREET

More Light on Brakes

This space is for dialog with members of the professional traffic safety community, either through your letters or through excerpts from the kind of public comments experts might have put in letters to us if they had got around to it.

Address brief letters to Two-Way Street, TRAFFIC SAFETY Magazine, National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. Letters may be edited. Views expressed do not necessarily represent the opinion of the National Safety Council.

I AM WRITING about your report on the Advance Braking Light Device (September/October, 1989) based on research done by Paul Olson at the University of Michigan. Dr. Olson stated that this device combined with the center high mounted brake lamp could eliminate up to 75 percent of rear end collisions.

I suspect that the device he evaluated is very likely to have a quite negligible benefit in rear end crashes. Naturally, that is my opinion, but it is based upon the data he reported. It would be remarkable for a device that may activate the brake light .2 or .3 seconds earlier than a conventional brake light to have such an astounding effect.

It is perhaps somewhat misleading to suggest that any device, particularly such a simple one, can reduce any type of motor vehicle crash 75 percent. Unfortunately, things are a lot more complicated than that.

The research studies done to evaluate the high mounted brake lamp found a 50 percent reduction in rear end crashes in the test fleets that were used. That also seemed optimistic, but at least it was based on hard data of actual accident reductions. Current estimates by the National Highway Traffic Safety Administration indicate that the high mounted brake lamp may have as much as 22 percent reduction in one report, and I believe it was 17 percent in their most recent evaluation.

I am concerned that misleading claims do not end up in possible government regulations of devices that are far less beneficial, if in fact beneficial at all, than may be claimed on the basis of limited study.

Rudolph G. Mortimer
Professor
Department of Health and Safety
Education
University of Illinois
Urbana/Champaign, Ill.

Kids in Pickups

There are laws for seat belt use. There are laws for child restraint seats. There are helmet laws. But every day I see children in the back of pickup trucks, where they have no protection at all in an accident. Why doesn't someone do something about that?

Ron Leap
Ft. Myers, Fla.

Traffic Facts

The remarkable decline in the national fatality rate is continuing, according to the latest figures. *Accident Facts* reports 2.46 deaths per 100 million miles of travel in 1988, the latest year.

The rate, which is interpreted as an indicator of progress being made in driver education, roadway engineering and police enforcement is notable for its long-range improvement. It dropped from 18.20 deaths in the 1920s to 11.42 in 1940, to 5.31 in 1960 and then to its present level of 2.46 deaths per 100 million miles.

Unfortunately, the fatality rate is a flawed method of measuring traffic conditions. Interpretations of the rate are based on the assumption that the number of deaths in the traffic system will vary directly with the volume of driving, an obviously false assumption, since it fails to take into consideration injury and property damage accidents.

The accuracy of the fatality rate itself isn't questioned. It is reasonably precise, but since fatal accidents make up less than one percent of the total accident toll it can't be called a complete picture of the traffic problem.

Milton Rose
Chicago

The National Safety Council Statistics Department replies: Mr. Rose is correct that the mileage death rate does not give a complete picture of the traffic problem. It is, however, the only measure of traffic *safety that is comparable from state to state and over time. Deaths are fairly easy to count because everyone agrees on what a death is.*

The counting of injury and property damage accidents is complicated by differences in definitions and reporting or investigating practices from state to state. Even within a state there may be substantial local variation in the reporting of injury-producing crashes. For these reasons, the mileage death rate is used as the primary indicator of traffic safety.

Non-Work Zones

"Life Risky in the Closed Lane" (January/February, 1990) placed emphasis on motorists' refusal to adequately reduce speeds in construction zones. For drivers to properly respond to construction zone speed limits such signs must be accepted as relevant. Motorists' collective experience with speed limit signs is that such signs do not reflect current travel speeds nor do they bear a sufficient relationship to what is perceived as safe and reasonable.

There is seldom any construction or maintenance going on the areas posted. Construction and maintenance zones may be posted 24 hours per day when work is only being conducted eight to 12 hours per day, five days per week.

James J. Baxter, President
Citizens for Rational
Traffic Laws, Inc.
Dane, Wis.

Optional Hazards

Survey questions safety of new car features

IN A PREVIOUS issue (January/February, 1990), TRAFFIC SAFETY asked readers to supply their observations on a list of options currently being installed in autos. There was overwhelming support for the value of seat belts.

When Pam McKissick, safety officer in Dallas, passed out copies of the survey to a group of defensive driving students, everyone claimed to have personal knowledge of their efficacy.

Features such as air bags, anti-lock brakes, traction control and four-wheel steering apparently have not been around long enough for all of the survey respondents to have acquired anecdotal information about them. Those who had experienced the new safety features were enthusiastic. One driver described anti-lock brakes as "the best thing to come along for tractor-trailer drivers in 20 years."

A number of convenience features were criticized as possible safety hazards. CB radios were seen both as a distraction and a safety feature. One respondent commented that they were "helpful many times in accident situations on the highway." Another wrote, "I have observed traffic being warned of emergencies on the road, thereby alleviating circumstances that lend themselves to accidents."

Several readers fretted about car telephones. One claimed to know personally of a car that "left the road due to driver's preoccupation with a phone call on car phone."

Most other features seem to have figured in accidents in someone's experience at one time or another. A professional driver didn't like tinted glass because "it causes close calls at intersections. You can't make sure they see you if you can't see them and make eye contact."

Other features worried respondents whether or not they had personal knowledge of problems. Power windows, for example. "With loss of electrical power, you can hardly get out of the vehicle. If you are under water, tough!"

TODAY'S TRAFFIC

Inventor Honored

Award Named After Borkenstein

The National Safety Council recently unveiled the *Robert F. Borkenstein Award* at the 11th International Conference on Alcohol, Drugs and Traffic Safety in Chicago.

The award was named for Dr. Borkenstein in recognition of his lifetime work in the field of alcohol and drug misuse in relation to traffic and transportation.

This on-going award will be presented annually to others in the field of alcohol/drugs and traffic safety.

For nearly 50 years, Borkenstein has been an international leader in forensic sciences, criminal justice education and traffic safety. He invented the Breathalyzer in 1954. He has published more than 45 articles and has received numerous awards. In 1988, he was inducted into the Safety and Health Hall of Fame.

Qualifications for the award include a minimum of 25 years in the field of alcohol/drugs and traffic safety and a minimum of 10 years as an active and productive volunteer with the National Safety Council.

Nominating information for the award is available from Al Lauersdorf, (312) 527-4800, extension 8540.

In the photo, the council's Lauersdorf holds the award aloft as Borkenstein observes.

Get Smart

Intelligent cars on intelligent highways are getting closer.

The Highway Users Federation has developed a 10-year plan to get technology in place to reduce collisions, congestion and accidents. The group plans to:

- Establish a goal and funds to establish advanced traffic control centers and on-board emergency vehicle control systems in metropolitan centers of more than one million people;
- Reserve radio spectrum space for highway-vehicle communications;
- Examine all obstacles to full use of intelligent vehicle/highway systems (IVHS);
- Establish communications rules and standards for IVHS;
- Fund university centers for research, development, testing, education and training;
- Develop legislation that provides a $1 billion, 10-year authorization to support government's share of development.

The federation has published its recommendations in Smart Cars, Smart Highways: Toward More Efficient, Safer Driving. For more information, contact the federation at 1776 Massachusetts Ave., N.W., Washington, DC 20036, (202) 857-1200.

Dr. Mounir M. Kamal, an executive director at General Motors Research Laboratory, recently told the American Association for the Advancement of Science about IVHS wonders that could become facts. Among his descriptions of technology in the mill are:

- Night vision and placement-in-lane sensors for vehicles;
- Driver warnings for imminent skids, attempts to change lanes without signaling, imminent collision, following too closely and unsafe driving for conditions;
- Automatic controls for proper spacing behind the vehicle in front, keeping the vehicle in the center of the lane, slowing or steering around obstacles to avoid collisions, regaining stability after a skid, placing and coordinating vehicles in convoy.

Kamal noted that some of the features will require "a big jump" in sensor technology. He added that there were potential cost, legal and consumer acceptance obstacles. On the other hand, he says, "several of these concepts are production viable in the near future."

Standard for Standards Starts Race

New federal requirements for highway light standards have started a race among manufacturers of steel, aluminum and fiberglass poles.

Starting July 1, the federal government will stipulate that poles must break off more easily in case of collision. The standard was written with today's lighter cars in mind.

Most poles now in use are steel. So steel pole manufacturers are developing more sensitive break-away devices for their heavy poles.

Aluminum pole manufacturers realize their products are lighter, but more expensive.

Fiberglass poles are not extensively used now. But manufacturers say that fiberglass is light, easy to handle and non-corrosive. One maker has developed a pole that snaps off cleanly when hit.

Opponents say that fiberglass poles whip around in the wind too much to be practicable.

Helmets Save Bicyclists' Lives

As many as 75 percent of deaths from bicycle incidents could have been prevented if the victims had worn helmets, accord to the California State Automobile Association (CSAA).

The group also states that helmets reduce the risk of injury by 85 percent. In addition, the CSAA reports that bicycle incidents caused more than 138 deaths and more than 15,870 injuries in 1988 in California alone.

For more information, contact Traffic Safety Department, California State Automobile Association, 150 Van Ness Ave., San Francisco, CA 94102, (415) 565-2291.

N.C. Governor Wants Tougher DUI Level

James G. Martin, governor of North Carolina, plans to ask the legislature to reduce the legal allowable blood alcohol concentration (BAC) from .10 percent to .04 percent for bus and truck drivers.

According to the *Tar Heel Centerline,* Gov. Martin had proposed such a level to previous sessions of the legislature, but it failed to pass. Martin is also in favor of:

- An automatic 30-day license revocation after a DUI;
- Increased penalties for motorists convicted of drunk driving in a fatal crash;
- The same drunk driving laws for both juveniles and adults;
- A .08 BAC drunk driving guideline for all motorists.

The governor is motivated by the drunk driver toll in the state; in 1988, 635 were killed and 20,000 injured.

Students Experience Driving Drunk

A major auto company brings home the dangers of drunk driving to teenagers in 1990.

The Dodge Car Division of Chrysler Motors is sending its Dodge Drunk Driving Simulator on a nationwide tour of more than 60 high schools in 20 major U.S. cities.

According to Dodge, the simulator is a late model Dodge programmed to simulate the slower reactions of someone who has been drinking. Without endangering anyone, it allows students to experience the slowed reaction times caused by alcohol.

The students first drive a course under normal conditions. Then they drive the same obstacle course after an on-board computer slows down the braking and steering functions.

Corporate co-sponsors include Hardee's Food Systems, Inc., Goodyear Tire & Rubber and PPG Industries.

Older Driver Needs Outlined

The Highway Users Federation offers *Workshop on Roadway Improvements for the Mobility and Safety of Older Drivers and Pedestrians,* a publication that outlines the problems and needs of older drivers. The brochure recommends improvements including roadway geometrics, traffic operations and pedestrian safety innovations. The recommendations came from a federation-sponsored seminar with input from Rep. Glenn Anderson, D-Calif., chairman of the House Public Works and Transportation Committee; federal, state and local officials; industry executives and highway safety specialists.

To receive a free copy of publication, contact the federation at 1776 Massachusetts Ave., NW, Washington, DC 20036, (202) 857-1251.

For more information on older drivers, ask about information on the council publication, *Commitment to Action.* Call your service representative at (312) 527-4800, extention 6900.

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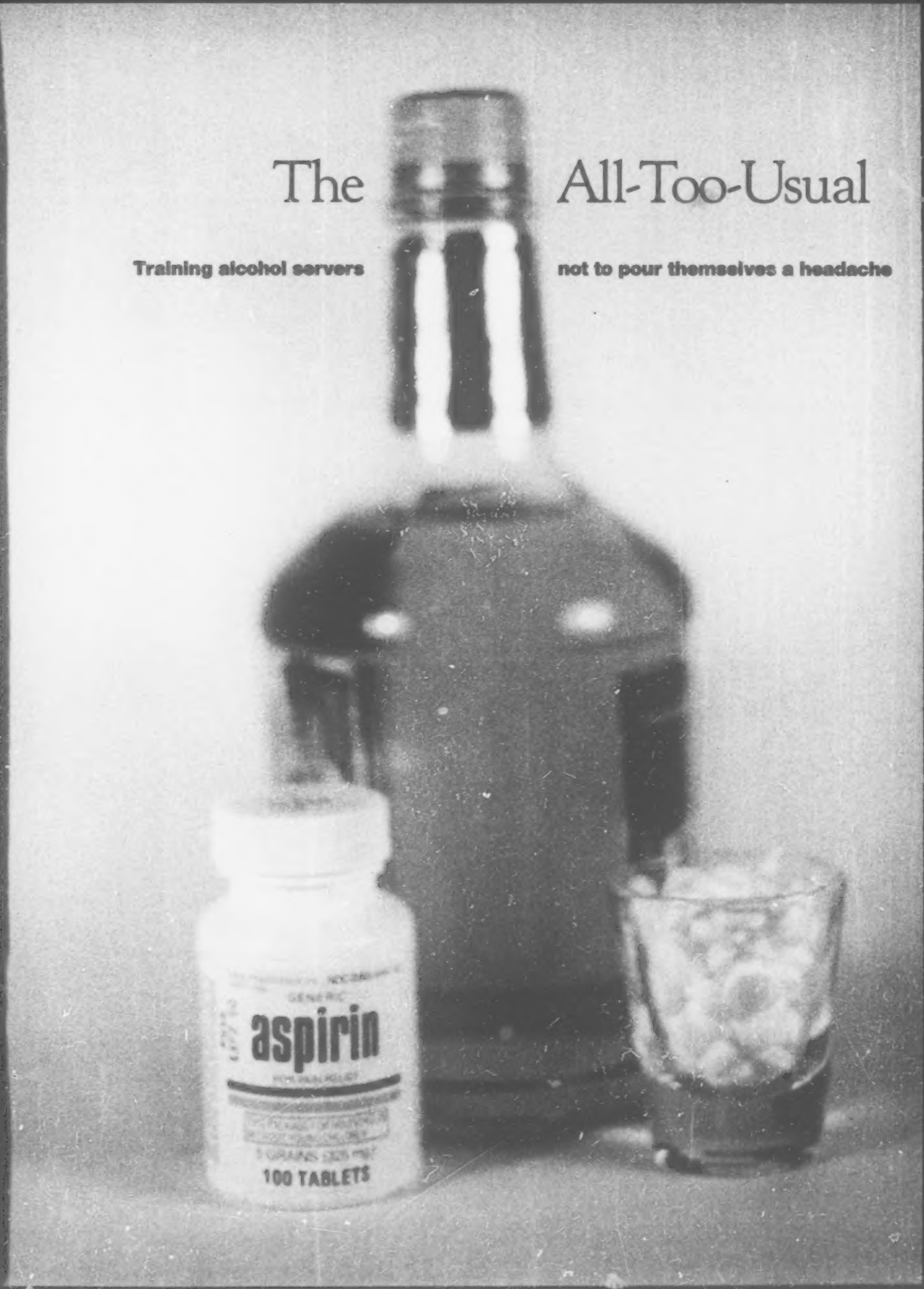
The All-Too-Usual

Training alcohol servers not to pour themselves a headache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aspirin
5 GRAINS (325 mg)
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BY AL LAUERSDORF

YOU WALK into your favorite drinking establishment, expecting to meet your friends, only to find bedlam. Several altercations appear to have broken out; blood is dripping off the face of one combatant. The owner and a bartender, trying their best to defuse the fracas, seem to be losing the battle. Only a call to the police will resolve this mess.

That call to the police can be expensive. Not only is it a mark against the establishment's license but, in all likelihood, insurance premiums will rise or a policy may be cancelled. And if an innocent bystander is injured, a lawsuit could be in the offing. We can also assume that a number of paying customers have left with no intention of ever returning. Good customers, the kind a tavern builds its trade around.

Let's suppose this establishment's owner, manager and bartenders had been trained in alcohol-server intervention. Would this scene have become a reality? Probably not.

Alcohol servers and bar-management people, trained in intervention tactics, would have foreseen pending difficulties and been able to prevent the fighting. Too much alcohol can bring out the worst in some people; they can become nasty and negative, with inhibitions virtually gone and no sense of propriety remaining.

Alcohol, when used improperly, is a factor in many brawls, crimes and other anti-social behavior, especially incompetent driving with resulting collisions.

History of a Problem

History does not record a specific date for the discovery of alcohol. The presence of beer and wine has been uncovered in many ancient archaeological sites.

Until about 500 years ago, fermentation was the only process by which alcohol was produced. Then distillation was discovered in 15th century Europe. Suddenly the alcoholic content of beverages rose far above the 14 percent reached through fermentation. Drinks with 50 percent, and higher, alcoholic content now became available.

No longer was most alcohol use restricted to ceremonial or religious purposes. Problems within societies resulted and regulations for the production, distribution and use of alcohol became necessary.

Alcohol came to America in the early 17th century. Laws to punish drunkenness soon were passed; display in the public stocks was a favorite sanction for the drunkard.

Temperance advocates began promoting abstinence in the early 1800s, looking upon "demon rum" as an intolerable commodity in our young nation. Eventually the teetotalers won out and prohibition of alcohol was effected through passage of the 18th Amendment to the U.S. Constitution. Production and sale of alcohol became illegal as of 1920.

Before repeal of the Volstead Act, the law creating prohibition, in 1933 by passage of the 21st Amendment, drinking continued to be a favored activity by many Americans. Speakeasies abounded. Gangsters became wealthy through their control of the illicit alcohol industry.

Foresee problem, prevent a fight.

Laws Strengthened

Nothing seems to diminish the love affair millions of Americans have with alcohol. Which is fine, except when they drink and drive. Deaths and injuries on our highways continue. The laws in all 50 states have been strengthened in attempts to minimize the problem of impaired driving and its undesirable results.

Nearly 25,000 people are killed each year in alcohol-related collisions; another 1.5 million are injured. The cost of these crashes, deaths and injuries is a stunning $24 billion each year. Of those losing their lives in alcohol-related crashes, 11 percent are pedestrians who had been drinking and 20 percent were passengers in a drinking driver's vehicle. Another 17 percent comprised the non-drinking drivers, passengers and pedestrians. Drinking drivers accounted for 52 percent of the fatalities.

It is estimated that one of every 50 drivers on the road at any given time is illegally intoxicated. On weekend nights the ratio increases to one driver in ten.

Though much of the concern within our society and government dwells on drinking and driving, alcohol may be an even greater factor in many crimes. Murders, spouse abuse and other domestic disturbances, burglaries and other felonies are commited under the influence of alcohol and/or other drugs. Estimates run as high as 80 percent.

Back at the Bar

Meanwhile, let's go back to the bar and see how all of this affects those businesses that purvey alcoholic.

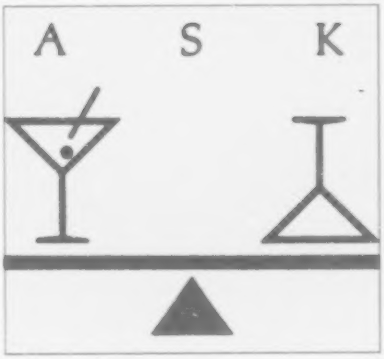
Whether you own and sell liquor in a tavern, restaurant, liquor store, convenience store, grocery shop or drug store, you can be held liable for the actions of the buyer/drinker if that person harms persons or property. "Dram shop" laws exist in about half of the states while others rely on common, or case, law to ascertain the responsibility for overserving or improperly selling alcohol.

Dram shop laws were first enacted in mid-19th century as part of the temperance movement. They established civil liability for saloon owners, often requiring the owners to bear financial responsibility for families of customers who had become habitual drunkards as a result of patronizing their taverns. Later, in some areas, it became popular for a spouse to have the picture of an alcoholic mate posted in bars so the mate would not be served.

The damage, injury or death of an innocent party by an intoxicated person need not have taken place on the premises of the bar owner cited for a dram shop offense. If it can be proven that the defendant sold or furnished the alcohol consumed by the party causing the injury, that the intoxicated consumer caused the injury, and that the inebriated person's excessive consumption helped cause the injury, the bar owner may be faced with an assessment of damages and license sanctions. Illegal sales to minors can often trigger such litigation.

Intervention

To forestall the possibility of dram shop actions, the managements of a



> **On weekend nights one driver in 10 has had too much to drink.**

number of bars, restaurants and other alcohol-retailing establishments are arranging for server-intervention training for their employees. Such training originated in the late 1970s.

One of the first programs was initiated by the Wisconsin Office of Highway Safety with its bartender traffic safety workshops. Twenty-five such one-day programs were held in cities with populations of 40,000 or more and in other communities on special request. Your author was involved in the implementation of some of these earlier workshops.

In light of the experience with this program the City of Madison made bartender alcohol awareness training a prerequisite to licensing of bartenders in 1981. A 12-hour progam was designed to help reduce the drunk driving problem, decrease police calls to bars and to increase the professionalism of licensed servers.

During the past decade a number of server intervention programs have been developed. They are known by a variety of names or acronyms, many of them local or regional, with several marketing their program nationally.

Several states have enacted legislation requiring some type of intervention training by servers/sellers or necessitating the certification of training programs by the state.

> **Training servers reduces dram shop liability exposure for owners.**

The ASK Task

About two years ago the National Safety Council decided that, as a long-established organization within the safety and health community, a Council server-intervention program should be developed and made available nationally. After careful consideration and deliberation, the consensus was that a program was needed that would be short enough to be practical to expect attendance by servers. Such a course should have participant involvement, including student role-playing scenarios. But above all, it had to be a quality program providing quality instruction by quality instructors.

The result was ASK (Alcohol Server Knowledge). Because it provided many of the qualities we wanted in a ~~server-training~~ program, we based ASK on the "Responsible Alcohol Service" program created by the National Highway Traffic Safety Administration. The basic premise of ASK is that a knowledgeable server can prevent a customer from driving impaired by recognizing the impairment and discontinuing service. Servers are made aware of state laws and local ordinances that deal with the sale and service of alcoholic beverages. They are taught how alcohol affects the human body and behavior.

Sessions included in the four-hour course cover responsible alcohol service, the need for responsible service, preventing intoxication and intervening with intoxicated patrons. A fifth hour of training is available for owners and managers.

ASK training materials consist of an instructor manual, four videos (on one tape), a student handbook, registration card and certification of completion and instructor certification. Pre-tests and post-tests are administered, with a passing grade required on the post-test to gain a certificate of completion. The hour of role-playing allows students to apply intervention tactics they have learned in the class. Instructors are trained by the National Safety Council and must be certified before they can teach server classes. In order to be certified, an instructor must be affiliated with a certified ASK training agency.

The Council provides national advertising as well as promotional and marketing materials to the ASK agen-

Al Lauersdorf is alcohol programs manager for the National Safety Council. For more information about the ASK Program, write to ASK Program Manager, National Safety Council, 444 North Michigan Avenue, Chicago, IL 60611.

cies. Although the program is in its infancy, we will have certified training agencies in 30 or more states by the end of 1990, with an ultimate objective of establishing agencies in all states and some Canadian provinces.

This description of the Council's ASK program gives you a brief insight into a server-training program. A majority of the 50 U.S. states have had legislative proposals requiring server training. It appears that passage of such laws is imminent and will serve as an effective countermeasure to drinking and driving. With the welcome support of organizations such as Mothers Against Drunk Driving (MADD), lawmakers will give strong consideration to alcohol-server intervention-training requirements.

Bartender Tips

1. Prohibit reduced drink prices during Happy Hour.
2. Prohibit drinks with more than two ounces of alcohol.
3. Prohibit sales of "doubles" or "triples."
4. Prohibit sales of "doubles" or "triples" late at night.
5. Prohibit sales of drinks in rounds.
6. Require customers to be alerted about complimentary drinks before they're served.
7. Require closing bar an hour before establishment closes.
8. Prohibit last calls.
9. Require servers to collect for drinks after every round.
10. Sell by the drink only, not in pitchers.
11. Prohibit customers from leaving the premises with drinks.
12. Require that non-alcoholic beers or wines be available.
13. Promote non-alcoholic beers, wine or cocktails.
14. Provide free coffee late at night.
15. Provide free non-alcoholic beverages to "designated drivers."
16. Provide free non-alcoholic beverages to patrons who have been drinking.
17. Provide free or discount food during Happy Hour.
18. Provide table snacks at all times.
19. Provide table snacks at certain hours.
20. Provide at least light food service anywhere alcohol is served.
21. Require that the IDs of patrons under 25 be checked.
22. Refer questionable cases to the manager.
23. Require patrons to verify in writing that their IDs have been checked.
24. Provide equipment to detect fake IDs.
25. Prohibit minors from being in areas where alcohol is served.
26. Prohibit service to adults who give minors alcoholic beverages.
27. Prohibit employees from serving intoxicated or underage patrons.
28. Discipline or fire employees who serve intoxicated or underage patrons.
29. Require server training in responsible beverage service practices and policy.
30. Establish clear and uniform penalties for violating beverage service policy.
31. Require managers to support servers' intervention efforts.
32. Prevent managers from ordering servers to provide alcoholic beverages to intoxicated patrons.

CHICAGO POLICE
FINE FOOD

The police officer who parked his squad next to a fire plug and several feet from the curb may be in hot pursuit of a vicious criminal. Even so, passersby can't help noting another example of driving behavior that would get them a ticket.

Police Paradox

Cops contribute to traffic dangers while protecting public

BY THOMAS FRISBIE

Police traffic chases killed 255 in one year.

DEADLY FORCE didn't cross David S. Melind's mind in 1986 when he decided to flee a police officer who caught him speeding in the Chicago suburb of Hoffman Estates.

The 17-year-old runaway, who had slept in his car the night before, knew he would be sent to a state youth home if police found him. So he led police on a chase at speeds of up to 85 m.p.h. in rush hour traffic. Finally, swerving around a road block, Melind found himself barreling toward a state trooper standing with a drawn gun on the shoulder of the highway.

It was a case of "deadly force equal to deadly force," an Illinois state police spokesman later said. That time, the deadly force claimed the life of the trooper.

Today, police officials carefully regulate the deadly force of police firearms. And law enforcement agencies across the nation also are beginning to write policies and debate ways to control the deadly force of speeding vehicles in police chases. Such policies, many feel, will help police lead the way to safer highways.

"The issue of deadly force with a motor vehicle, a firearm, a nightstick, a flashlight—it's all related," said William Carter, executive director of the Minnesota Board of Peace Officer Standards and Training. "What is happening in relation to (debate over) pursuing is very reminiscent of what was occurring in Minnesota 10 to 15 years ago relative to firearms and shootings."

To help regulate police pursuits, Minnesota now requires that all police chases be reported to the state. Since Oct. 1, 1989, every police department in Minnesota has had to have a written policy on chases.

"Legislators were becoming concerned with the nature of police pursuits and their outcomes," Carter said. "There were a couple [illegible] pursuits that ended in death that really caught the attention of the legislature."

Pursuit Risky

It's an area that needs careful attention, law enforcement officials agree, because a police pursuit can be very risky, especially in crowded areas. Some 255 people died in police chases nationally in 1987, the most recent year for which totals are available. Despite the debate over the deadly force of speeding vehicles, people have continued to die. In 1988, three Los Angeles police officers were killed speeding in response to an emergency call. In South Carolina, an 86-year-old woman was killed as she sat in her front yard when a speeding police car careened out of control. In Ohio, a man being pursued by police smashed into a car, killing five members of a family. Two teenagers were killed and a third was injured in Wood Dale, Ill., after a crash ended a police chase that had exceeded 100 m.p.h. In Rhode Island, two young women fleeing police died after crashing into a utility pole. In Pennsylvania, three 19-year-old men died in a crash after they sped away to avoid a traffic citation.

The personal toll of such crashes was vividly illustrated in April, 1987, in a cramped courtroom in Wheaton, Ill., when a jury convicted David Melind of murder for his role in the chase that resulted in the state trooper's death.

'How do you know that it's not Son of Sam?'

Melind, stunned, slumped facedown onto a table in the courtroom. His father, seated behind him, sobbed loudly, "No! No! He's a good kid, he's good! He's so young. I just can't believe it!"

Shortly afterward, the father of the slain trooper sobbed in the hallway outside the courtroom as he talked to reporters. "You raise a good kid for 27 years and some bum takes him off the street. The verdict can't bring my son back."

"I feel like my life was wiped out," the trooper's wife said. "When I go home, it's an empty house. .... I'm afraid of its emptiness."

Melind himself told the judge, "I didn't mean it. I never hurt anybody in my life. I would never want to hurt anybody."

Cars Like Bullets

Could such an incident have been prevented? Can police do more to rein in the deadly force of speeding autos running through red lights or spinning out of control toward other motorists caught unawares? Police have described autos traveling at high speeds in a chase as 3,000-pound bullets. But considerable debate remains over when it is appropriate to unholster such weapons.

Dennis M. Payne, former deputy director of the Michigan State Police, believes much of the criticism of police chases is fueled by people with "a hidden agenda."

"Police officers are sworn to uphold the law and ... (to) protect life and property, but to do that they sometimes to have to go fast," Payne said. "The media writers, etc., over the years have led people to believe police officers doing their jobs are horrendously dangerous to everyone concerned. ... I don't think the risk is that high."

Payne thinks the hazards of pursuits are over-emphasized while the benefits are overlooked. Now a faculty member at Michigan State University's School of Criminal Justice, Payne is gathering data about police pursuits "to help police agencies develop good, sound policies."

One of the principles Payne adheres to after 25 years of engaging in pursuits, supervising pursuits and writing pursuit policies is that felons often are apprehended after a chase that begins with a minor traffic violation.

"Some (police departments) seem to have a blanket philosophy of chasing only serious known offenders, but I have yet to see one who carries a placard in the back window saying: 'I'm a felon.' How do you know that it's not Son of Sam? There are some risks inherent in having a safe society. The risk in not chasing at all is we're open to all the predators."

Avoid Trivial Pursuits

Geoffrey Alpert, in contrast, believes police should go to great lengths to avoid trivial pursuits.

"We are still chasing traffic offenders and risking lives far more than is necessary," said Alpert, a professor at the College of Criminal Justice at the University of South Carolina. "Pursuit can be more dangerous than use of a weapon. You've got a car weighing two tons going 60 to 70 m.p.h. as opposed to a little bullet that usually doesn't hit anything. A lot of police officers never have fired a gun on the street, but I have never met an officer who never has been in a pursuit."

Just when should a police officer risk the deadly force of a chase? To help answer that question, Alpert compiled one of the few detailed studies of police pursuits. He analyzed more than 1,000 chases in Dade County, Fla., and evaluated hundreds of chase policies from around the nation. His conclusion: Too many chases involve police officers who merely have a hunch that the motorist is a serious criminal.

"You know what you've got. If it was a traffic violation, then it was a traffic violation. There is no room for speculation, no room for an officer who thinks this guy might be a bank robber. All he knows is what he has seen, or what he has been told. If the police officer saw someone drive through a stop sign, that's one thing. If he saw someone shoot a clerk at a convenience store, that's something else. Life is more important than property, even if it is some sort of a felony theft. It is more important to preserve life than to chase someone for property crime."

> **One chase maybe solved at least two homicides.**

Many unnecessary chases are initiated by police departments where there is no policy governing pursuit, said Alpert, whose research is detailed in the book *Police Pursuit Driving: Controlling Responses to Emergency Situations*, which was scheduled to be published this spring by Greenwood Press in Westport, Conn.

"The police departments without policies are frightening. Not to have a policy is to have a policy of no policy. The ones who decide not to have a policy, they really have a policy of deliberate indifference. There are more than you might think."

When Not to Shoot

In 1985, the U.S. Supreme Court ruled in *Garner v. Tennessee* that police could not shoot at a fleeing felon, but could fire only when defending their own lives or the lives of somebody else.

"Before the Garner decision, the argument police had was: If we don't shoot fleeing felons, all felons will flee. And they don't," Alpert said. "Too many chases have occurred where the officer thought, this guy could be a bank robber or could be a rapist, and we are going to chase him. And maybe it was a kid who just borrowed Dad's car without permission. Then you see two people dead. There are hundreds of cases like that."

Alpert believes police departments need to take four steps to properly control pursuits.

First, a department needs a very strong policy. Second, department officials must make sure police officers are trained to follow that policy. Third, each pursuit must be properly supervised and controlled. Fourth, there must be some follow-up, some procedure that establishes accountability for those involved in the chase.

"A lot of chases that end without injury are bad chases. And a lot that end with injury are good chases. The outcome isn't always the best way to look at it," Alpert said.

Some police officials, however, caution that reining in the deadly force of a police chase might give a green light to criminals who no longer fear pursuit. For example, Laimutis Nargelenas, assistant deputy director of the Illinois State Police, believes some law enforcement agencies are getting too conservative about pursuits.

Fewer Chases

"Some departments are getting close to the point of no chases at all," Nargelenas said. "That concerns most of us, in that any time someone doesn't want to stop they will just take off. It can cause you real problems, maybe getting people to flee police who wouldn't normally even think about it."

In February, a successful police chase that started with a speeding violation on Interstate 57 in Illinois and that ended with a crash — but no injuries — on a nearby country road yielded information that promises to solve at least two homicides, Nargelenas said.

"You never know in these pursuits why the person is running. The officer may be thinking it's only a traffic stop, but for all we know the person just committed a homicide someplace. Or it can turn out to be a young kid who doesn't have a driver's license."

The uncertainty of police chases means that officers must be well-trained and that each chase should be carefully supervised, Nargelenas said. More frequently than in the past, supervisors are calling off chases that are too risky, he added.

> **'Police departments without policies are frightening.'**

"It's the same thing as use of deadly force. Police officers are trained how to shoot a weapon. The vehicle is also a deadly weapon. The officer needs to know how to drive a vehicle properly, when to pursue and when not to pursue. If, for instance, life is being endangered, we are going to back off. To catch this person and to cause a loss of life is not a reasonable situation."

Lt. Arthur Anderson, manager of special projects and research for the California Highway Patrol, said his agency's policy is to pursue suspected felons and also chase those suspected of misdemeanors "until it endangers the public."

New Resources

But new resources can make it safer for police to conduct chases on the state's 140,000 miles of roads, Anderson said. For example, the California Highway Patrol now has helicopters stationed in Fresno, Los Angeles, Sacramento and San Francisco. "Once you get air support, they can generally direct units from the air and stop pursuing at high speeds on the ground," he said.

William Carter said his efforts to coordinate pursuit policies in Minnesota have shown there is a need for training systems that simulate police pursuits.

"There is simulation training that helps police officers decide whether to shoot. It measures the individual officer's reaction time and whether the reaction is appropriate. A simulated scenario is 30 seconds long, and from there they are given another scenario, but the outcome is different. That type of training is desperately needed for the area of police pursuit."

Good Guys, Bad Examples

COMPLICATING matters, police must keep in mind that there is more than one deadly force imperiling motorists. The way that police drive their cars, and whether they wear seat belts, can set an example for other motorists that can have an impact on highway safety long after police have left the scene.

For that reason, Charles L. Spilman, president of the Detroit nonprofit group Traffic Safety Now, is waging a campaign to get more police officers to wear seat belts during pursuits, as well as at other times. Spilman said his organization now is doing a survey and creating discussion groups to encourage police officers to wear seat belts.

"We have fairly good evidence that where policemen are seen wearing seat belts, the general public does look at them as role models. I believe that officers have a very high degree of responsibility for buckling up, and I really don't know [why] an officer would want to be exempted from that law."

In some of the 33 states where seat belts are required, police have sought an exemption from the requirement, Spilman said.

Traffic police have known for 40 years that the presence of police can affect how motorists drive, said Kent Milton, spokesman for the National Highway Traffic Safety Association.

"There is an objective of this agency to encourage police personnel all over the country to use seat belts because it does have a roll-modeling effect," Milton said.

In California, a special committee of law-enforcement officials is traversing the state to encourage police to wear their seat belts, said Don Hinton, commander of the planning and analysis unit for the California Highway Patrol.

David Carter, associate professor of criminal justice at Michigan State University's School of Criminal Justice, said police have a long way to go before they are universal role models for highway safety.

"First of all, it is the rare officer who wears a seat belt unless the officer has someone with him who thinks he ought to," David Carter said. "The two most common reasons they give for not wearing seat belts are, one, that they have to get out of the car fast and, two, that it gets in the way of their gun.

People Complain

"We know that people will complain about police driving habits. It is just my observation over the years as a former police officer (in Kansas City, Mo.) that police officers by and large are notoriously bad drivers, particularly municipal police officers.

"One reason is that they know they are not going to get a traffic ticket while they are on duty, and so that threat of enforcement is taken away. Secondly, they take police cars places where cars were never meant to go. It's easier to drive down an alley than to get out and walk. I think that is why you see a lot of police cars with dings and creases."

Police wearing seat belts are role models for public.

Another traffic-safety issue that David Carter said needs more attention is the proliferation of computer terminals in squad cars. Police use the terminals for license plate number checks, non-emergency dispatching, transmitting alert information and car-to-car messages.

"I have ridden with officers who were trying to get messages over a computer terminal. They take their eyes off the road, or sometimes they just stop where they are in the middle of the street to try to type.

"Most of them are not touch typists and it's hard to do anyway, so instead of concentrating on driving, they are thinking about the protocol for entering the right numbers into the computer and then watching to get response back."

How much can police lower the risk of deadly force on highways?

Quite a bit, both by wearing seat belts and following sensible pursuit policies, Nargelenas said. And members of the public should remember that patrolling and police chases are part of everyday life on the highways, he said. The dramatic long chases that draw publicity are rare, he added.

"The types of things you see on TV don't happen that often," he said.

Top Cops Must Lead

As field troops are role models to the public, commanders are role models to the officers within their command. Input and active participation from top management should be solicited during the developmental stages of a safety belt use policy. Managers and commanders need to understand the impact of any mandatory use program and the importance of the issue. Budgetary considerations, monitoring, and the reporting of use, along with sanctions imposed for noncompliance, will most likely fall within their areas of concern. Understandably, they need to be involved from the outset in order to ensure they will support the implementation and enforcement of the policy.

Commanders set the tone and temper for those who serve under them. A particular position or policy will only be accepted and, therefore, meet its intended objective when it is viewed by the troops as a matter of importance to the "brass." A paper policy, or one without meaningful sanctions, will not convey the importance of this issue to the troops, and will fail to demonstrate management means business. It follows that management must take the lead by announcing its intention to require belt use and to ensure continued belt use through training, education, monitoring and sanctions for noncompliance.

Excerpt from "Occupant Protection Systems and Trends for Police Managers," National Highway Traffic Safety Administration, August, 1989.

loors
TRI COUNTY
DRIVING SCHOOL
KANE COUNTY
DUI PROGRAM
DAN M. BERO, M.A. C.A.C.
INDIVIDUAL·FAMILY·MARITAL
COUNSELING
AMERICAN FAMILY
INSURANCE

Time out: In a small town in northern Illinois one-stop service for traffic-game players in need of coaching includes a driving school, an auto insurance agency, the county DUI program and a family counselor.

Games Speeders Play

Detecting detector detectors

BY MICHAEL MALONE

A SPANKING NEW tollway, Interstate 355 in west suburban Chicago, was officially opened to traffic at midnight on Dec. 23, 1989. For the first two days of operation the ride would be free, but the speeding tickets wouldn't be. Just 12 minutes after it was opened, Illinois state police issued their first ticket for speeding on the new thoroughfare. Radar clocked the driver at 74 m.p.h. in the 55 m.p.h. urban interstate speed zone. The ongoing war of wills and wits between speeders and the traffic-safety and enforcement establishment has moved to a new battlefield.

The conflict between those charged with maintaining safety on the nation's highways and drivers who regularly exceed speed limits is fought on two fronts: the technological and the psychological. The combination of technological advances in enforcement with an active public relations campaign seems to offer the best hope of winning on both fronts for traffic-safety professionals.

The psychological aspect of the conflict may best be described by looking at the problem from the point of view of the chronic speeder and from the point of view of the traffic-safety and enforcement professionals. Hekki Summala, a psychologist interested in driving behavior, calls the attitude of the chronic speeder the "skill model" of behavior. She described it in an article in *Human Behavior and Traffic Safety*, edited by Leonard Evans and Richard Schwing:

"The skill model of driver behavior implied that the safety of a driver is mainly determined by the level of his skills in relation to the situational demands on these skills. . .such theories provide the basis for claims for freedom in traffic: as we are skillful drivers and we have not been involved in accidents, we must have freedom on the roads. Accordingly, we need neither speed limits nor safety belts. Only those less skillful and more accident prone should be screened out of traffic or be re-educated."

Behavior Model

This behavior model, widely supported among traffic-safety professionals in the 1960s and early 1970s, held that driver education was the key to most traffic-safety problems caused by high speed. In fact, the National Highway Traffic Safety Administration introduced a concept of a "Master's Drivers License."

It would be available to those passing a special, more difficult driving test which included emergency maneuvering and crash-avoidance.

It is the attitude found behind the arguments of most organized advocates of higher speed limits. The Citizens for Rational Traffic Laws, Inc., called a "professional speeders' lobby" by some police officials, is perhaps the foremost public promoter of higher speed limits. A sampling of letters and articles in their newsletter demonstrates a predisposition to the "skill model":

- ". . .there has only been one serious design flaw ever proven in automobiles. . .and that's the loose nut behind the steering wheel."
- "When American drivers come home [from Germany], we gripe about the United States' lowest-common-denominator highway system, where roads are under-maintained and speed limits are kept low to accommodate untrained drivers."

Speed detection technology has created a mini arms race

Motivational Model

The "motivational model" proposes a simple motivational loop, according to Summala. On the one side of the loop you have "excitory kinds of motives which push drivers toward faster and more hazardous driving." On the other side of the loop, the inhibitory system is based on avoiding risk. Ordinarily, these drivers tend to avoid risk experiences. A problem results when the inhibitory system, which is based on experienced risk, doesn't work well enough to balance the "excitory motives." Better engineering of both cars and roadways, familiarity with routes and comfortable trip-lengths could all add to what some would call a mistaken sense of well-being at high speeds.

When the natural inhibitions and risk-avoidance instincts don't work, safety experts add another risk to the inhibitory side of the equation: the risk of being given a ticket for speeding. It is at this juncture technology begins to play an important role. Radar and its latest offspring help increase the speeder's risk of arrest.

The use of radar to detect and arrest speeders dates back to the early 1950s and it was during those pioneering days that the court battles over radar evidence were fought and won. John E. Sheehy, in his book, *Modern Traffic Law*, describes the four major conditions radar had to meet in order to be accepted in a court of law:

1. Is it a trustworthy device?
2. Was it functioning properly at the time?
3. Were the operators technically qualified?
4. Does the testimony relative to the radar findings meet the rules of evidence? (This generally means that the arresting officer has the offender in sight at the time of the violation.)

New devices would still have to meet these conditions, but most of the new generation devices used to track speed are viewed as improvements on the basic radar device. After all, if a ticket could be issued based on the use of the Electro-Matic Radar Speed Meter in 1955, who is going to quibble with the findings of a high-tech laser in 1990?

Mini Arms Race

Of course, as soon as the police introduce a detector, they create a market for a detector a driver can use to detect the police detector. What has been created is a mini arms race, where every advance in technology adopted for law enforcement is answered within a year by the $300 million-a-year radar detection industry.

One new development which threatens to break the cycle of measure and countermeasure is the laser speed detector. The laser detectors send an invisible beam of light at the target car with more precision than the broader radar beam so that it can pick out a single car up to a third of a mile away. Motorists' radar detectors would not give any warning. The laser units will cost more than three times as much as the conventional radar units, but their use will also make any detectors built to defeat them expensive as well.

Laser "detectors" would actually have to be optical jammers which would return signals showing lower speeds. According to David Williams, president of International Measurement and Control Company, developers of the laser unit, jamming would be a very expensive proposition. "You basically have to put a laser diode in the instrument and several receivers on the front and back of the car. Radar detectors sell for $100 to $400, but this kind of instrument would cost significantly more. I'd guess it would run at least $1,500."

Photo Radar

Another new device is not based on new technology, but a combination of conventional radar and large camera with a telephoto lens. It is mounted in the back of a small truck or station wagon that is then parked in an area where speeding has been a problem. Once in position, the photo radar will take a picture of any vehicle that exceeds the speed set by the technician in charge. It might be set to photograph any vehicle exceeding 37 m.p.h. in a 30 m.p.h. zone, for example. The license number, driver, location, date and time are all recorded when the radar triggers the camera. If the evidence is clear (this generally means not only a clear license plate number, but also a clear picture of the driver), then the vehicle owner is sent a ticket. About 70 percent of the photos taken result in evidence clear enough for a citation.

If images of the unrelenting tyranny of Big Brother are evoked in complaints against the use of radar alone, one can image the outcry as photo radar is considered for use by law enforcement agencies. The key to the legal challenge rests on the assumption that the speeding driver is the owner of the vehicle, since the citation is issued to the car owner.

Presumed Guilty

This assumption has been challenged by groups as disparate as the Radio Association Defending Airwave Rights (RADAR) and the American Civil Liberties Union (ACLU). The legality of presuming the owner was the driver at the time of the violation "turns the legal system upside down," according to Janice Lee, president of RADAR, "forcing the vehicle's owner to prove his or her innocence rather than requiring the state to prove the driver guilty." The ACLU challenged the concept in Arizona, where the system is in operation in Paradise Valley. In all cases the courts found the system did not violate the rights of drivers, and the Arizona Supreme Court refused to accept jurisdiction in the one ACLU appeal which reached that level, in essence upholding the lower court's ruling.

COURTROOM 104-109
ROOM 102
ALCOHOL PROGRAMS

Penalty box: Traffic court in a large city is always well attended.

Even the docile English speed if posted limit isn't reasonable.

Once the legality of the procedure has been established, actual court challenges to the tickets themselves have been few. Pasadena, Calif., is one of the two U.S. cities currently using photo radar. Sgt. Ron Warner reports that during the past year and a half the city has issued almost 15,000 tickets for speeding based on photo radar evidence and only 283 have been challenged in court.

"That's nothing," Warner said. "We probably have more challenges for hand-held radar."

Real Purpose

The technological one-upmanship that goes on between law enforcement officials and those looking for an "edge" to fight detection may sometimes cloud the real purpose of setting and enforcing speed limits: the prevention of accidents. The best approach to the goal seems to be a combination of rational speed limits and increasing the perception of risk of apprehension in order to balance the "motivational loop" which governs the behavior of drivers so that the actual speed limit is obeyed.

A study prepared for the AAA Foundation for Traffic Safety, "Speed Variance and Its Influence on Accidents" (July, 1988), reveals that higher speeds do not necessarily result in higher accident rates but that accident rates increase with speed variance for all types of highways.

Among other things the study

Publicity a cheap way to increase effectiveness of costly new lasers.

found that speed variance tends to be at a minimum — the safest condition — when the difference between the posted speed and the "design speed" of the highway was kept to between five and ten miles per hour. The design speed is defined as "the maximum safe speed that can be maintained over a specified section of highway when conditions are favorable." Design speed depends on the type of highway, the topography, and the land use adjacent to the highway.

Speed Variance

When speed limits are set without proper consideration of the acutal design speed of the highway, speed variance increases as more and more dirvers ignore the posted speed limits. Most planners use the "85th percentile" guide for setting speed limits. David K. Witherford described it this way in his 1970 book, *Speed Enforcement Policies and Practices*: "The 85th percentile speed (the speed at which or less than which 85 percent of the vehicles are traveling) is the most desirably approximated speed limit. There is almost a sheer drop below this percentage which would cause a large number of drivers to be violators."

Even the notoriously law-abiding English are apt to become a nation of speeders if the limits are not rationally determined. John Adams, in an article in *Human Behavior and Traffic Safety*, says: "It appears likely that legislation governing behavior is only likely to work where it ratifies well-established public opinion." An example from England suggests that "where legislation runs ahead of public opinion, it is effectively nullified by non-observance and non-enforcement."

Impractical Enforcement

A particular stretch of four-lane, divided highway was posted for 50 m.p.h., which drivers and police routinely ignored. The limit was raised to 60 m.p.h. and the Secretary of State for Transport justified the decision as follows:

"Speed limits needed to be realistic; if not, the majority of drivers tended to break them and this made enforcement impractical. It brought the law into disrepute."

It is when the speed limits are reduced based on other subjective factors, whether they be political, economic or emotional, that speed variance will increase, as will the potential for accidents.

Speaking of the findings contained in the AAA study, Sam Yaksich, Jr., executive director of the AAA Foundation, said, "It is time to take emotionalism out of speed regulation discussions and begin again to rely on engineering and professional expertise in speed-control program implementation."

If the speed limits are rationally set, the great majority of drivers will comply. Then the problem becomes increasing the risk of apprehension of those who don't.

Public Relations

But as David Shinar and James McKnight point out in their article in *Human Behavior and Traffic Safety*, public relations might be just as important as the number of gadgets with which we arm our police.

"The major determinant in compliance behavior is not necessarily what the police do, but how it is perceived. The effectiveness of enforcement in obtaining compliance depends greatly on each driver's risk of apprehension. All other things being equal, the greater the driver's perceived risk, the more likely is that driver to comply with traffic law."

Cost may give cops with lasers edge over motorists.

Every advance in technology, then, ought to be accompanied by a public relations effort by traffic-safety professionals aimed at making motorists aware of the greater risk of apprehension if they do exceed the speed limit. It would be a relatively inexpensive way to increase the effectiveness of the new equipment law enforcement agencies are acquiring.

The answer to the problem of speeding on the highway is to keep in mind the end result desired: reduced speed variance leading to fewer accidents. The combination of rational speed limits based on the actual design speeds of roads, advances in technology to detect speeders, and an aggressive public relations program to increase the perception of risk of apprehension is required in any program designed to make highways safer.

EVENTS

Bikes Abroad

MAY

Advanced Transportation Management Seminar for Executives — May 7-18, Evanston, Ill. (Northwestern University) — Transportation Center at Northwestern University, 1936 Sheridan Road, Evanston, IL 60208-4040. (708) 491-3225.

Velo Secur '90 International Cycling Safety Conference and Cycling Safety Fair — May 2-4, Salzburg, Austria — ARGUS-Fahrradburo Vienna, 1040 Wien, Frankenbergg.11.0222/65 84 35 od. 50509 07.

Information Systems for Highway Safety: 16th International Forum on Traffic Records Systems — July 16-19, Bal Harbour, Fla. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8405.

Hazardous Materials Transportation Training — May 8-9, Kansas City, Mo.; May 15-16, Memphis, Tenn. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

'Funny' Drunks on the Rocks

Public attitude turns serious on drunken driving

BY MAURICE J. HANNIGAN

Maurice J. Hannigan is commissioner of the California Highway Patrol.

WE USED TO THINK drunks were funny. Remember how people loved Dudley Moore in *Arthur?* We have stopped laughing. *Arthur 2 On the Rocks*, five years after *Arthur*, was a disaster.

What happened?

More than anything else, Californians— along with the rest of the country — perceived a fundamental truth: Drunks are not funny; they are substance abusers. They cost this nation millions of dollars a year in absenteeism and poor on-the-job performance. They cause incalculable damage in terms of child and spousal abuse. And they are responsible for half of the fatal traffic accidents on this country's roads and highways.

That makes them criminals.

The drinking driver did not fare well in the California legislature last year. In the course of the 1989 session that representative body enacted the following:

- An amendment of the DUI (driving under the influence) vehicle code sections that lowers the blood alcohol concentration (BAC) level for DUI from .10 to .08.
- A statute that establishes an "administrative per se" program empowering peace officers to confiscate the driver's license of anyone arrested for drunk driving. Unless the Department of Motor Vehicles stays the suspension, the violator's driving privilege will be suspended for four months and reinstated only after the violator pays a re-issue fee of up to $100.
- A revision of the vehicle code that lowers the BAC limit for DUI for commercial drivers from .10 to .04. It also requires any operator of a commercial vehicle with a BAC level at or above .01 to be placed out of service for 24 hours and authorizes the Department of Motor Vehicles to suspend or revoke the commercial license of any commercial driver who is convicted of DUI or who refuses to take a DUI chemical test.
- A provision that allows the courts to sell the vehicle of any person charged with three or more misdemeanor DUI violations or with a felony DUI violation within seven years of a prior DUI conviction.
- A sentence-enhancing provision that directs courts to add from 48 hours to 90 days of jail time — depending on the number of prior DUI convictions — to the sentence of anyone convicted of driving under the influence with a boy or girl 13 or younger in the vehicle.

Latest trend gains in California: .08 BAC limit.

(The revisions pertaining to commercial drivers do not go into effect until 1992; the other four become effective in 1990.)

No Coincidence

It is no coincidence that this cluster of anti-DUI legislation came to pass in 1989. In tightening the screws on drunk drivers, the California legislature is only acting out the will of the people. And that will has shifted.

Between Jan. 1, 1989, and Dec. 31, 1988, 40,385 people in California died in traffic accidents; 20,722 — 50.5 percent — of those deaths occurred because one or more of the drivers had been drinking. During that same period California traffic officers arrested more than 2.75 million people for driving under the influence. That is almost *one thousand people a day* over an eight-year period.

Getting drunk drivers off the road has been the number one priority of the California Highway Patrol from almost the time of its inception 60 years ago. And informing the driving public of the hazards of drinking and driving has long been the number one priority of the department's Office of Public Affairs.

The consequence of this combination of aggressive enforcement and energetic public-awareness campaigning has been a high level of recognition in California of DUI as a serious problem — a recognition that has been greatly heightened by the creation and activities of Mothers Against Drunk Driving (formed by a Sacramento woman whose child was killed by a drunk driver), Students Against Drunk Driving, the creation and development by the highway patrol of the Sober Graduation program and anti-DUI activities by other groups.

Highest Potential

I believe that all the anti-DUI laws passed by the California legislature during this past legislature session are important. But to my mind the one with the greatest potential for diminishing the incidence of drunk driving and thus reducing the number of fatal traffic accidents in this state is the .08 law.

California is not the first state to enact a .08 law. Oregon, Utah and Maine also have a .08 threshold for drunk driving.

At the time the .08 law was enacted here, many people dismissed it as unnecessary and/or unenforceable. These people missed the point.

I compare this law to a boxing manager watching his boxer in a prizefight. As soon as the manager sees signs his charge is starting to tire or fade, he throws in the towel — provided he is the sort who wants to keep his fighter healthy — before there is any serious injury.

In passing the .08 law, the legislature acted very much like a concerned boxing manager. Their approval of this measure is a message to the public: If they want to drive after drinking, they have to come out of the ring before the end of two rounds, because after two rounds — or in the case of alcohol, two beers, highballs or glasses of wine — it is too late. They are not in a condition that permits them to drive a vehicle safely.

Two drinks in one hour will put a 150-pound person in the vicinity of the new DUI threshold in California. More than two will almost certainly put him or her over the line and into the area of being at risk.

Research Conclusions

Medical research has established that a person with a .08 BAC is impaired — too drunk to drive. Driving a vehicle safely is, of course, dependent on more than simply the amount of alcohol in the system. Nonetheless, alcohol in the system can be a critical impairment.

According to a drink chart guide developed by the California Department of Motor Vehicles, two drinks consumed in one hour will place anyone between 90 and 150 pounds in the .07 to .09 BAC category. A person weighing between 150 and 190 pounds will be at the .06 level after two drinks in one hour, and anyone over 190 will be at the .05 level. California's new law makes .05 to .07 "likely DUI," and .08 and beyond "definitely DUI." It should be noted that weight is not the only element that determines how much alcohol actually enters the blood. The amount of food in the person's system, his or her metabolism and how tired the person is all contribute as well.

> **Drunk driving becoming outré**

According to the American College of Emergency Physicians, "Epidemiologic and experimental data persuasively establish that the risk of a driver being involved in an injury or fatal crash increases as the alcohol concentration increases. The measurable impairment to operate a motor vehicle begins in most drivers at or below .05 percent, and *all drivers are impaired at a BAC of .08*" (ACEP Position Statement issued June 6, 1988, emphasis added).

The most common problem for the boxing manager I referred to earlier is that his fighter does not want to stop the bout at the same time his manager does, because he does not think — recognize — he is in danger.

This is also the problem law enforcement must confront in persuading California motorists of the validity of the .08 standard. Most people at or slightly above .08 do not feel under the influence and simply do not understand that all the primary faculties that combine to maneuver a vehicle safely on the road — judgment, perceptions and reflexes — are operating under an inhibiting cloud that makes it impossible for them to control their vehicles or respond to a hazard or sudden threat the way they would when sober.

This ignorance is a precondition to highway tragedy. It is the ignorance that the California Highway Patrol and other law enforcement and traffic safety organizations must wipe out for the .08 law to be fully effective.

The situation in California today is very much like the nationwide situation in the early 1960s when the U.S. surgeon general declared smoking an across-the-board health hazard. Almost overnight, smoking, an activity that up to that point had been quietly, generally, almost passively acknowledged as probably not very good for you, was publicly and officially proclaimed to be bad for you.

Now the California legislature has passed a law establishing, in effect, that people who attempt to drive after consuming even small amounts of alcohol are endangering themselves and others, and will be arrested and prosecuted if they do it. And it is the task of the California Highway Patrol and other public and public-minded agencies to educate the state's 20 million drivers — the majority of them with a relatively low level of awareness concerning the impairment potential of low-level alcohol consumption — to the behavioral implications of the new law.

One Drink Less

The campaign's initial objective must be to ensure the public realizes the law has been changed from .10 to .08. The next objective will be to state the behavioral implications of the new standard in terms the public can understand and use in guiding their own activities. The CHP's public awareness campaign is based on establishing that most people will reach a state of intoxication where it is illegal for them to drive one drink sooner than when the legal threshold was set at .10.

The ultimate goal of any campaign tailored to increasing awareness of this new law must be to instill in the public an appreciation that the legislature lowered the legal threshold to this new level because it is a metabolic impossibility for the human body to avoid serious impairment with that much alcohol in the system. In addition, for someone attempting to maneuver 3,000 pounds of steel on today's streets and highways, that impairment is life-threatening to others.

One drink less expected to save many lives.

The campaign to sensitize the motoring public to the point where they can resist the temptation to get behind the wheel after consuming relatively low levels of alcohol will doubtless be a long and difficult. Twenty-five years after the surgeon general's pronouncement on the hazards of smoking, the campaign to sensitize people to the hazards of smoking is still far from over.

This is not to say there has not been important progress. Smoking in California, at least in public, has been transformed to the point where it is deemed antisocial. As highway commissioner, I hope the fate of the practice of drinking and driving in California would become no less objectionable.

WASHINGTON WORLD

The 21st Century Begins to Roll

Feds will let the states pay the toll

BY JIM CASTELLI

PRESIDENT Bush and Transportation Secretary Samuel Skinner have announced a comprehensive national transportation policy designed, in the president's words, to "begin to create the transportation system of the 21st Century."

Initial reaction to the report — "Moving America: New Directions, New Opportunities" — has been mixed. While there is broad support for a concerted effort to rebuild the nation's transportation infrastructure, governors, mayors and members of Congress have complained that the policy shifts costs away from the federal government and to the states, localities and transportation users.

Skinners said the policy is built on six themes:

- Maintaining and expanding the transportation system.
- Providing "a sound financial base" for transportation.
- Maintaining a competitive transportation industry.
- Ensuring public safety.
- Protecting the environment.
- "Advancing transportation technology into the 21st century."

The policy would focus federal highway spending on major arteries and impose new responsibilities on states and local governments for building and maintaining local roads. It urges states and localities to hike gasoline taxes and rely more on revenue generated through tolls, transportation taxes and other user fees. The average state gasoline tax is now 16 cents a gallon, double a decade ago. The federal gasoline tax has stood at nine cents a gallon since 1982.

Skinner developed the policy statement over the past year. It is the first such plan in more than a decade. Skinner has estimated that the United States must spend $1 trillion to $3 trillion on transportation during the next 20 years, at least three times as much as in the past. This year the federal government is expected to spend about $18 billion on transportation, $14 billion of it on highways.

Blueprint

The new policy offers no specifics on money and instead presents a general blueprint. The details will come in follow-up legislation, including upcoming re-authorization bills for highways, highway safety and mass transit.

Here are highlights of the new transportation policy:

- Safety: Increase the number of federal aviation, railroad and motor carrier safety inspectors; improve safety standards.
- Highways: Concentrate federal spending on major national arteries; increase state and local share of funding federal highway projects. (The government now picks up about 80 percent of the tab, up to 90 percent on some projects.)
- Tolls and taxes: Urge states to use more road tolls and increase state gasoline taxes to fund road construction.
- Mass transit: Reduce federal assistance and increase the state and local share.
- Hazardous material: Strengthen the oversight of the transportation of hazardous material.
- Trucking: Further deregulate the industry; impose uniform reporting practices and procedures at state level.
- Research: Increase federal research and development funding by

70 percent over the next five years; this would include about $13 million for further development of a "smart car," equipped with sensors that alert drivers to traffic congestion and alternative routes.

Taxes Acceptable

Citing a 1989 survey by the American Association of State Highway and Transportation Officials, Skinner argues that motorists would accept a gas tax increase to pay for road construction and research. According to the survey, 50 percent of the public would vote for an increase of 16 cents per gallon in fuel taxes if the money were "used to support the right combination of expenditures."

According to an association spokeswoman, the "right combination" would involve having 4.9 cents of the increase used to improve roads, 2.9 cents for research, 2.3 cents to reduce traffic, 2.1 cents to reduce accidents, 1.9 cents on mass transit, 1 cent on pollution and 0.6 cent to reduce the federal deficit.

Skinner declared that congestion on land and in the air "will get better," but only at a price borne by users. "Thirty-three states have raised their user fees and put programs into place with federal support to rebuild the nation's infrastructure," he said. "We just have to do more."

The fact that 18 states boosted their gasoline taxes last year and a total of 33 have raised some transportation user fees shows that Americans are willing to pay for greater speed and safety, Skinner said.

Highway Fatalities Decline

The 1989 highway fatality rate was the lowest in U.S. history, according to the National Highway Traffic Safety Administration. There were 2.2 deaths per 100 million miles of travel, down from 2.3 the year before. The rate was 3.4 per 100 million miles in 1975 and 3.2 in 1981.

There were 45,500 traffic fatalities in 1989, down from 47,093 in 1988.

Transportation Secretary Skinner said, "The reduction in traffic deaths during the 1980s reflects our national resolve against drunk driving, increased safety belt use and a generally heightened awareness of highway safety."

Child Protection

NHTSA Administrator Jerry Curry says the 213 safety defect investigations opened in 1989 were the most in the agency's 20-year history. Curry said 6.8 million vehicles were recalled and 77 percent of those were influenced by NHTSA investigations.

Curry says NHTSA has started to "explore the potential benefits" of government registration of child safety seats. But he said the primary safety risk is that 40 percent of children who could be protected by car seats or safety belts are not, because "they're not restrained at all or because they're not properly restrained."

Curry said the agency has opened 19 investigations since 1981 that led to recalls affecting 1.3 million safety seats. "The principal question about these recalls is how effective they've been in securing the remedy of the seats," he said. "Of the six million seats subject to recall, only a small percentage have been remedied.

Curry testified at a hearing of the House transportation committee. The committee called the hearing after the Center for Auto Safety charged in December that the government was not enforcing its child car seat compliance and recall program and that half of the child restraints in use were defective.

Clarence Ditlow, president of the CAS, said child seat manufacturers do not have to meet notification or record retention requirements. "Owners of child seats do not benefit from the automatic record-keeping function vehicle makers must maintain. If a child seat owner does manage to find out about a recall campaign, it is only through persistence and luck."

New NTSB Chief

The Senate has confirmed James Kolstead, former vice president for public relations for Frontier Airlines, as chairman of the National Transportation Safety Board. Kolstead has been acting chairman of the National Transportation Safety Board since Aug. 14, 1988, when Jim Burnett failed to win Senate approval for a fourth two-year term as chairman.

The agency has been struggling with a shrinking investigative staff and a tight budget. Its job is to learn the causes of the nation's worst accidents in the air, sea and on land. One board member, Joseph Tribbe Nall, was killed Nov. 28 in a plane crash in Caracas, Venezuela, where he had gone to give a speech.

The agency investigates 3,000 accidents each year. Its staff has been reduced from 400 to 324 over the past decade. The Bush administration has asked for a fiscal 1991 budget request of $30.9 million, a $3.7 million increase over the 1990 budget. This would fund 22 additional staff positions, primarily for investigations.

In one of his first appearances after his confirmation, Kolstead told the House Appropriations Committee transportation subcommittee that the board would place a greater emphasis on the "human factor" in accidents. "The real responsibility for safety occurs in the cockpit of the airplane and the cab of the truck and the bridge of the ship, not with some. . .agency," he said.

He said the NTSB has already "placed a greatly increased emphasis on the human factor" in the transportation accidents it investigates. Noting that "70 percent to 80 percent of all accidents are operationally induced," Kolstead said he plans to continue focusing on human factors, particularly in the area of drug and alcohol abuse.

In 1988 trucks were involved in 28 percent of all fatal accidents and 18.8 percent of all accidents, according to statistics compiled by the National Safety Council.

Other News

A General Accounting Office Report has found management deficiencies in the Department of Transportation program to test transportation workers for drug use. The GAO cited insufficient guidance to employers, failure to review employer drug testing plans and failure to monitor and ensure compliance.

The House Public Works and Transportation Committee will hold a year-long series of hearings on rebuilding the nation's infrastructure. The committee chairman, Rep. Glenn Anderson (D-CA), says "60 percent of our highways and 41 percent of our bridges are in need of work; traffic congestion has increased over 50 percent in the past 10 years."

The Treasury Department has issued final regulations ordering that warning labels on alcoholic beverages be "legible, conspicuous and prominent." The warnings have been required since last November, but public comment demanded that they be more visible. The new regulations will take effect next November.

Ignition interlock device tests motorist's breath for traces of alcohol.

Cars Can Reverse Drunk Drivers

Engine starts only for sober driver

RICH WILLIAMS was arrested last month for his third DUI offense, but he's still not ready to admit he may have a problem with alcohol. In his mind, the fact that he has a family and a good job somehow makes him immune to something as serious as alcoholism. Even after court-ordered installation of an ignition interlock in his car, he remains blinded by his denial. He looks at the device simply as a sanction, rather than a friend that can also help him overcome his drinking problem.

Every day, the interlock requires Rich to pass a breath test before he can start his car. Recently, one Saturday afternoon, he tried without success to start his car and head for a bar. The interlock had detected an unacceptable blood alcohol level - a reminder of the drinking he'd done at lunch. The car wasn't listening to any more of Rich's excuses.

This pattern of denial is not unusual for someone recently sentenced to have an ignition interlock installed in the car as punishment for a drunk driving offense. Once installed, the device prevents drivers from starting their vehicles while under the influence, and eventually teaches them about their patterns of drinking and driving.

Rich was sentenced to use an interlock system that connects a breath analyzer to a vehicle's electrical system. Once installed, the driver must blow into the system, pass a BAC (blood alcohol concentration) test at a pre-set level, and use a breath code for the intended driver only, in order for the vehicle to start.

Staggering Problem

Each year in America law enforcement officials must grapple with staggering drunk driving statistics. It is estimated that over 50 percent of traffic fatalities are related to the use of alcohol. In addition, the National Highway Traffic Safety Administration estimates that two out of five people in the nation will be involved in an alcohol-related traffic accident at some time in their lives.

The car knows the way not to go home

These statistics frustrate officials responsible for public safety, who work to keep drunk drivers off the roads. Enforcement officials know the reality behind the statistics: the families and loved ones of those injured or killed.

This issue has captured national media attention, and state legislatures have begun to respond. In 1989, more than 20 states introduced legislation to permit, or require the use of interlocks by convicted drunk drivers.

Repeat Violators

One of the major factors contributing to the drunk driving problem is its chronic nature. The National Highway Traffic Safety Administration reports that DUI offenders usually have committed between 200 and 2,000 drunk driving violations before their first arrest. In general, most states give first-time offenders a license suspension of 30 to 90 days and a fine of 500 dollars or less.

Furthermore, many legislators are recognizing what most judges and enforcement officials already know; that license suspensions alone do not keep drunk drivers off the road. According to Mothers Against Drunk Driving (MADD), 60 to 80 percent of persons with suspended licenses continue to drive. Clearly, it seems that courts nationwide need to be made aware of more effective deterrents to drunk driving.

In several jurisdictions throughout the country, law enforcement and probation officials have witnessed the effectiveness of ignition interlock systems. Ohio, Pennsylvania and California have all recently conducted

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studies of two years or longer to determine the interlock's effect on re-arrest rates for drunk drivers. In each case, the results illustrated that the interlock deters DUI re-arrest.

Five-Year Study

Researchers from the Institute of Behavioral Science at the Univeristy of Colorado recently completed a 30-month status report on the Hamilton County Drinking and Driving Study, a five-year research program in Hamilton County, Ohio. The study began in 1987 and involved 358 participants who have been convicted of DUI.

Half of these participants represented the experimental group, with ignition interlocks installed in their automobiles. The other 179 comprised the control group and were sentenced to the more traditional sanction of license suspension.

The two groups were paired and matched according to similar personal characteristics, arrest histories and other factors known to put persons at risk for DUI. These risk factors included problem drinker classification; number of prior alcohol-drug-related arrests (non-DUI); and the number of prior DUI arrests. It was determined that the experimental group members had more prior DUI arrests, putting them at a slightly greater risk for re-arrest.

DUI offenders using interlock less likely to repeat offense.

After 30 months, the DUI recidivism rate (re-arrest for drunk driving) for the experimental group on interlock was only 3.4 percent. Individuals on interlock were three times less likely to be re-arrested for drunk driving than those in the control group under license suspension who had a recidivism rate of 9.8 percent.

Recidivism Reduced

Overall, this represents a 65 percent decrease in the probability of DUI recidivism. The University of Colorado report also showed that at every point in the course of this study, interlock users had a lower re-arrest rate than those sentenced to license suspension.

The national interest in the Hamilton County study gave rise to a similar study in Cumberland County, Pa., and produced similar results.

In Cumberland County, officials of the Accelerated Rehabilitation Disposition (A.R.D.) Program, a probationary program for first-time DUI offenders that incorporates the use of ignition interlocks, recently concluded a two-year study of their effectiveness.

The joint A.R.D./Interlock pilot program, institute in October, 1987, for DUI offenders with a BAC of .10 or more, involved 291 participants using ignition interlock devices as a requirement for license reinstatement. The results of the study revealed the nation's lowest two-year recidivism rate: 1.37 percent.

Paul Meuron, probation officer and head of Cumberland County's A.R.D./Interlock Program, said: "Most people arrested for drunk driving have a serious drinking problem, and along with that goes denial. They're lying to themselves, their family, their DUI instructor and probation officer, but they can't lie to the interlock machine."

Preliminary results of a third pilot program recently conducted in three counties in California echo the findings in Ohio and Pennsylvania. When released this spring, the study should provide valuable additional support for the use of the devices.

States Act

Since 1986, when California became the first state to pass legislation, 16 states have enacted laws allowing the use of ignition interlock systems with DUI offenders. Twelve states are already using the devices with offenders: Washington, Oregon, California, Texas, Nebraska, Iowa, Michigan, Indiana, Ohio, Pennsylvania, New York, and Maryland. Over 450

Drunks can lie to themselves but not to machine

judges throughout the country are successfully using the devices as part of sentencing with drunk drivers.

Experience in the field has shown law-enforcement officials and substances-abuse professionals that the interlock provides deterrence in a number of ways: First, the interlock design physically prevents an intoxicated driver from starting the car by shutting down the electrical system. Second, over time it can become an important behavior modification tool that discourages the driver from drinking at all.

Alan D. Gagnon, a certified addiction counselor and former police officer, examined the possibilities of using interlock devices along with rehabilitative treatment to deter DUI arrest among high-risk drivers. Formerly head of the Residential Alcohol Treatment Program at Rutland Heights Hospital, Rutland, Mass., he is presently the director of addictive disease services at Salem Hospital in Massachusetts.

Studies of offenders in the Rutland program indicated that the recidivism rates of second-time offenders completing traditional substance-abuse treatment is 10 percent, compared to 20 percent recidivism for similar offenders given a 29-day jail sentence. Gagnon believes the interlock could reduce recidivism rates even further, because it can help change behavior, and help offenders understand the dangers of drinking and driving.

"The ignition interlock system can be an effective device in addressing immediate public safety, and over the period of use can help offenders understand and learn their limitations with respect to alcohol use while driving," said Gagnon.

'But for that device, I'd have drunk all night.'

Drinkers Helped

The vast majority of offenders sentenced to interlocks come away with the feeling that they are helping to save more than just their own lives.

Jerry Slape of Auburn, Wash., a former drunk driver sentenced to the interlock, commented on his experience: "I've had the interlock installed in my car for almost two years, and although I resisted the very idea of it at the beginning, I've come to truly appreciate having it. It has been an excellent tool in dealing with my drinking problem."

"Once, early in the program, it kept me from drinking when I was in a bar. I ordered a couple of drinks, and just before I took them I thought of the interlock in my car outside. I also thought about how embarassed I'd be to call someone to come drive me home. So I left without drinking. Had it not been for that device, I would have drunk all night and tried to drive home. It helped me not be another potential 'killer by vehicle.' "

Update

KIP FULLER, a Denver inventor who helped develop the Guardian Interlock, saw the need for it after an experience of his own. When he was 19, he himself was convicted of driving under the influence.

It wasn't something he intended to do. In an interview with the Associated Press, he said he asked himself why someone hadn't thought of a device that would prevent drunk driving before the car left the curb.

"The 'why' part of that question got me thinking about a method of prevention. It sure would have helped me back then," he said.

Ironically, his latest invention works the other side of the traffic enforcement street. Like the Stealth bomber, it resists radar detection at long range. Carbon fibers in a "bra" that fits over the front end of a car absorb radar beams. By the time police radar can lock in, the driver has a chance to slow down.

Fuller, now 33, has said he tries to invent products that help government do its job. His justification for the anti-radar device is that "it helps keep them on their toes."

Radar, he said, can give misleading readings at long distance because the beam from a radar gun spreads. Forcing the police to wait for a shorter range shot makes their readings more accurate and discourages using the radar gun to generate revenue.

Fuller doesn't manufacture the Guardian Interlock. Based also on the work of Don Collier, now board chairman, it's made by Guardian Technologies, Inc., of Cincinnati, a subsidiary of Cincinnati Microwave.

Isn't It Rude To Drive Like THAT?

Survey examines changing public attitudes

ENFORCEMENT can do only so much. What really changes public behavior is social pressure. Several articles in this issue report on new trends in public attitudes. We'd like to know whether you are seeing similar developments in your community.

TRAFFIC SAFETY will tally your answers and pass along to the traffic safety community what you're telling us.

Comments Invited

Make your answers as extensive as you like. You can either check off the answers to the accompanying questions and stop, or add your comments as well.

You can just tear out this page and send it in. Or, if you have to share your copy of Traffic Safety with others, you may want to photocopy the page. Then you can write your comments on the back.

Mail your responses to:

TRAFFIC SAFETY Survey
National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611

	Yes	No	Maybe
1. Commissioner Hannigan of the California Highway Patrol says Californians have become distinctly less tolerant of driving under the influence of alcohol. Would you say this is also true where you live?			
2. In many places, alcohol servers are being trained to cut off patrons before they become drunken menaces to themselves and everyone else. In your community are owners and managers cooperating?			
3. Is alcohol-server training having a noticeable effect?			
4. Are police more likely now to consider their own driving behavior as an example to the public?			

The Polite Finger

COMMUNICATION BROCHURE

"Seven Signals for Safer Driving," a brochure illustrating basic hand signals for motorists to communicate with each other, is available for distribution by businesses, public agencies and other organizations.

The brochure outlines a hand communication system that uses common signals and lights on the vehicle to convey seven messages to other motorists: I'm sorry; slow down, danger ahead; please yield left lane; pull over for problem; check your lights; need assistance; and thank you, I understand.

The signals attempt to better driver relations, identify vehicle or road problems early, provide immediate aid to stranded motorists and improve lane courtesy. — **Citizens for Rational Traffic Laws Inc.,** 6678 Pertzborn Road, Dane, WI 53529.

TRUCK RESTRAINT

The automated Truck Stop STAR 3 truck restraint for loading docks is activated by a hydraulic system using pushbuttons. It has a restraining force of 30,000 pounds and an operating range from 11 inches to 30 inches above the drive.

Dock workers raise the unit's restraining arm with a switch in the control panel. When the arm contacts the truck's ICC bar, the outside light changes to red, warning the driver not to pull away. The control panel light display inside also turns red for the dockworker. When loading or unloading is complete, controls are activated again to release the unit, and lights change back to green. — **Kelley Company** Inc., 6720 N. Teutonia Ave., P.O. Box 09993, Milwaukee, WI 53209-0993.

TRUCK PUBLICATIONS

"Safety Publications and Services" catalog for motor carriers contains materials to help carriers understand and comply with federal regulations requiring substance abuse awareness and drug testing programs.

"Aware Because We Care" is a comprehensive drug and alcohol abuse awareness program tailored to the trucking industry. The employee training program covers the warning signs of alcohol and drug abuse, the effects of substance abuse on job performance and the legal and financial consequences of abuse.

The program has two 12-minute videos, a leader's guide, samples of four educational booklets, eight employee payroll stuffers reinforcing program messages and three posters promoting awareness of the dangers of substance abuse.

Compliance forms, "US DOT Drug Testing Regulations — Overview for Motor Carriers," a video on "Recognizing Substance Abuse" and other publications are also available — **American Trucking Association,** 2200 Mill Road, Alexandria, VA 22314-4677.

BELT ADJUSTER

LooPo is a safety belt adjustment device that reduces discomfort by allowing motorists to create slack in their belts. The 2¾-inch-by-1¼-inch device slides onto the safety belt. A control lever allows the belt to be adjusted for personal comfort after it is buckled. Upon impact, it snaps to its tightest position to secure the body. — **AIB Financial Group Inc., LooPo Division,** 104 Ponce De Leon Blvd., Miami, FL 33135.

BARRIER MACHINE

This self-propelled movable barrier machine can be used in construction zones and in sections with reversible lanes. The machine picks up a connected string of three-foot concrete or water-filled barrier sections and shifts them right or left to add or subtract a lane. A lane can be changed at a rate of one mile every 15 minutes. — **Energy Absorption Systems Inc.,** One E. Wacker Drive, Chicago, IL 60601

TRAINING SIMULATOR

The L-300 series driver training simulation system uses microprocessors in each trainee cab for immediate feedback on performance during the lesson and more realism.

A light-pen or touch-screen control panel replaces indicator lamps and switches on the instructor's console. The console's computer interprets information about each driver's progress. A high-resolution color monitor has multiple displays that allow an accurate interpretation of system cues. An optional printer provides a summary of all lesson data and a record in real time of all programmed and manual performance checks.

A wide-angle, 16mm film and sound system provides the windshield-view of traffic. An optional yaw motion base provides left-to-right movement of the simulator cab from steering. — **Doron Precision Systems Inc.,** P.O. Box 400, Binghamton, NY 13902.

GOGGLE PLATES

Filtrex Plus are hardcoated polycarbonate filter plates and lenses for welding helmets and goggles. They are designed to have increased impact resistance, exceeding the 1989 ANSI Z87.1 Standard for high-speed and high-mass impact. The filter plates can be used alone or with Duogard clear safety or cover plates. — **Gateway Safety Products Co.,** 4722 Spring Road, Cleveland, OH 44131.

LIBRARY

New Breathalyzer

Please Note: Library *is prepared by the National Safety Council Library — Robert Marecek, manager. The National Safety Council Library is unable to supply any of the materials listed here. For your convenience, the names and addresses of the publishers are listed.*

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SHORTCUTS

Motorized Bombs Resisted

Diane K. Steed, former administrator of the National Highway Traffic Safety Administration, revives the issue of the proposed vapor recovery system for automobiles in a report to the American Coalition for Traffic Safety, Inc. (ACTS).

Gasoline vapors escape and pollute the air during refueling. Pumping 12 gallons of gasoline into a car's fuel tank can produce four ounces of vapor.

Onboard systems to collect the fumes involve installation of large charcoal canisters, larger fuel hoses and lines, a liquid-vapor separator and additional valves in cars.

Recovery systems installed on gas pumps — called stage II controls — capture the escaping vapors and return them to the underground storage tank until they can be disposed of safely.

The highly explosive nature of gasoline fumes increases the risk of automobile fires if the vapors should escape from the canister and collect anywhere along the system, the ACTS report said.

Other Possible Problems

A recent study conducted by Arthur D. Little, Inc., for the secretary of transportation found "potential safety risks associated with onboard systems." And one congressman referred to cars equipped with vapor recovery systems as "motorized bombs."

Besides the risk of fire or explosion, researchers found that onboard recovery systems created driving problems, such as stalling, that may tempt owners to tamper with the system. This would increase the potential for danger, according to the ACTS report.

Each year, vehicle collision fires cause some 1,900 deaths. Even a slight increase in the risk for fire could end up claiming more lives than the smaller number of pollution-related illnessess that the onboard system may prevent, the study said.

Stage II recovery systems have been in operation in gas pumps in California for 15 years. Washington D.C., New Jersey, St. Louis and Metropolitan New York have recently installed the systems. The Stage II systems can be installed in gas stations within a few years, while it would take about 15 years to equip all new cars with the onboard system, the report said.

Gas-pump systems appear to be simpler and less expensive to install and operate, and safer than the onboard recovery systems, according to ACTS.

A study by Carnegie-Mellon university determined that the automobile systems would cost $3.5 billion more than the Stage II systems.

"Collecting the vapors at the pump actually works better than onboard control systems," ACTS said. "And they clean up the air without creating safety problems for American motorists."

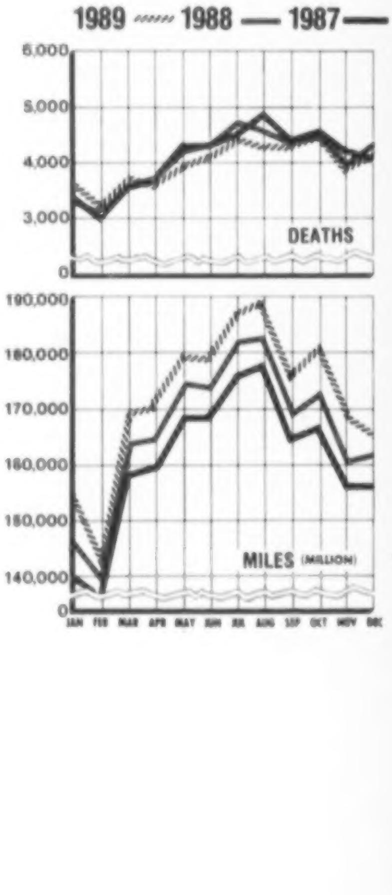
STATISTICS

1989 Traffic Fatalities Down 4%

BY MARY E. JOHNSTON and URSULA ZUEHLKE

TRAFFIC SUMMARY

Month	Deaths 1989	Deaths 1988	Change
December	4,080	4,350	−6%
12 months	47,000	48,900	−4%



DEATHS for the 12-month period ending December totaled 47,000, a decrease of four per cent from the 1988 12-month total of 48,900.

Motor-vehicle deaths in December totaled 4,080, a decrease of six per cent from the December, 1988, total of 4,350.

Disabling injuries for 1989 are estimated to be about 1,700,000. These are injuries resulting in disability beyond the day of the accident, and do not include minor injuries which probably totaled as many more.

The cost of motor-vehicle accidents for 1989 is estimated at $68 billion.

Based on preliminary vehicle mileage reports for this year, the estimated mileage death rate for the entire year is 2.3 (deaths per 100 million vehicle miles).

State Experience

Among the 50 states reporting December experience, 31 states had fewer deaths than in the preceding December, and 17 states and the District of Columbia showed increases in deaths. Two states showed no change in the number of fatalities. For the full 12 months, 34 states showed decreases in the number of deaths, while 16 states and the District of Columbia showed increases.

Delaware	−28%
Maine	−23%
North Dakota	−22%
Rhode Island	−19%
Wyoming	−18%
Connecticut	−17%
New Jersey	−16%
Tennessee	−13%
Kansas	−12%
Alaska	−11%
Indiana	−11%
Louisiana	−10%
Vermont	− 9%
Illinois	− 8%
Montana	− 8%
North Carolina	− 8%
Oregon	− 8%
Idaho	− 7%
Kentucky	− 7%
Virginia	− 7%
Maryland	− 5%
Missouri	− 5%
Michigan	− 4%
South Carolina	− 4%
Massachusetts	− 3%
Minnesota	− 3%
New York	− 3%
Florida	− 2%
Texas	− 2%
Hawaii	− 1%
Pennsylvania	− 1%
Washington	− *%

Traffic Deaths By State

Deaths are reported by state traffic authorities. All figures are preliminary. To insure proper comparisons, 1987 and 1988 figures cover the same reporting period as those for 1989.

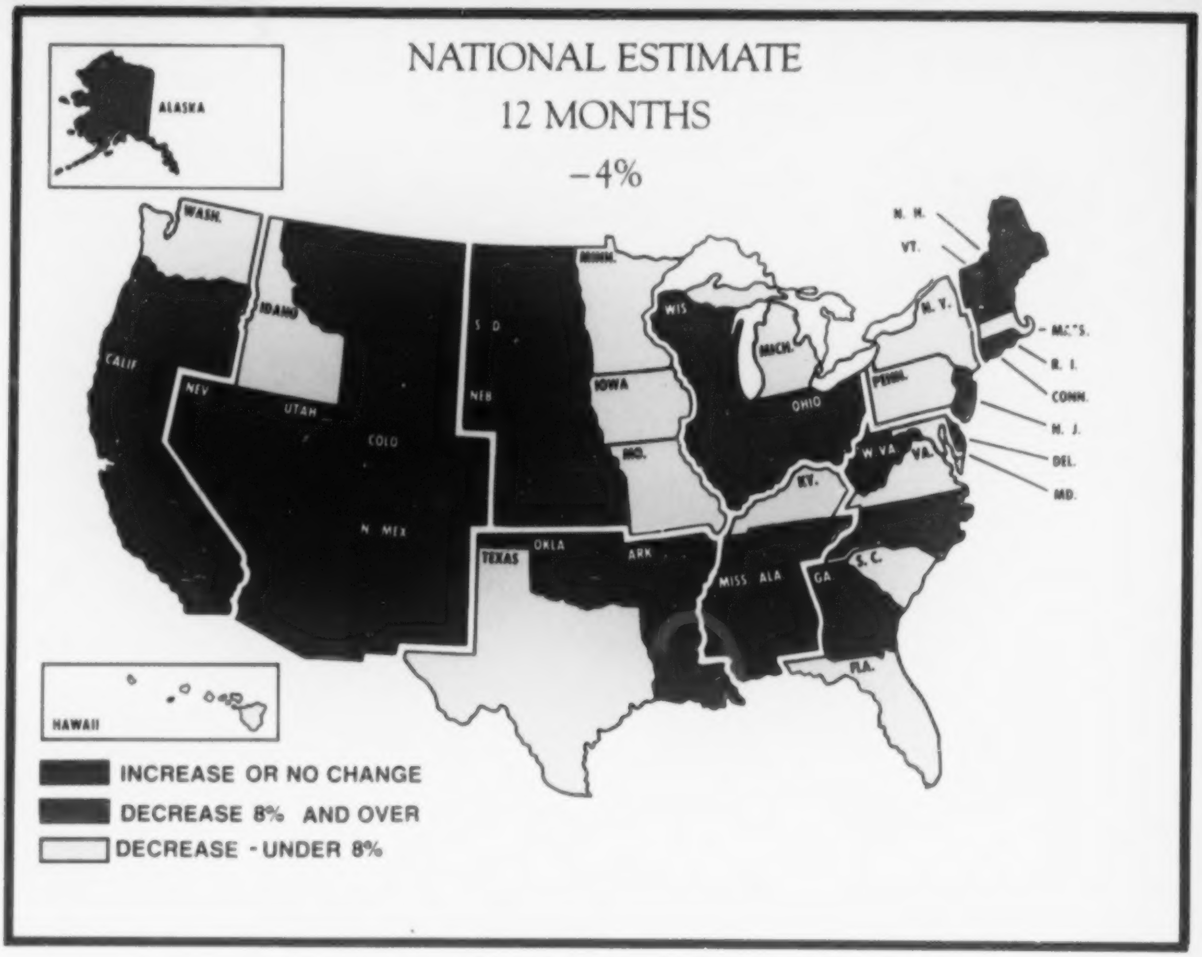
Population Rate: U.S. population rate is the estimated annual number of deaths per 100,000 population, assuming that deaths for the rest of the year will follow the normal seasonal pattern. State population rate is the estimated annual number of deaths per 100,000 population, assuming that the monthly average of deaths will remain at the present average for the rest of the year. U.S. population rate is based on July 1, 1989, population estimate; state population rates are based on July 1, 1988, population estimates, U.S. Bureau of Census, Washington, D.C.

States shown in CAPS have improved in 1989 compared with 1988.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

		DEATHS IDENTICAL PERIODS			PERCENT CHANGES			
STATE NAME	NO. OF MOS.	1989	1988	1987	1988 TO 1989	1987 TO 1989	1989 POP. RATE	1989 MILE. RATE
Total U.S.	**12**	**47,000**	**48,900**	**48,290**	**- 4%**	**- 3%**	**18.9**	**2.3**
Alabama	12	1,004	994	1,101	+ 1%	- 9%	24.6	2.7
ALASKA	12	83	93	74	-11%	+12%	15.8	1.8
ARIZONA	12	859	944	909	- 9%	- 6%	25.4	2.7
Arkansas	12	645	611	637	+ 6%	+ 1%	27.0	3.3
California	12	5,105	5,091	5,261	+ *%	- 3%	18.5	2.1
Colorado	12	522	498	589	+ 5%	-11%	15.8	1.9
CONNECTICUT	12	406	489	451	-17%	-10%	12.6	1.4
DELAWARE	12	118	164	147	-28%	-20%	18.3	1.8
D. of C.	12	75	62	56	+21%	+34%	12.1	2.2
FLORIDA	12	3,016	3,092	2,878	- 2%	+ 5%	25.1	2.8
Georgia	12	1,599	1,591	1,560	+ 1%	+ 3%	25.7	2.5
HAWAII	12	147	149	138	- 1%	+ 7%	13.6	2.0
IDAHO	12	238	256	259	- 7%	- 8%	23.8	2.6
ILLINOIS	12	1,722	1,865	1,682	- 8%	+ 2%	14.9	2.1
INDIANA	12	970	1,093	1,054	-11%	- 8%	17.5	2.2
IOWA	12	511	550	487	- 7%	+ 5%	18.0	2.3
KANSAS	12	416	475	483	-12%	-14%	16.8	1.8
KENTUCKY	12	776	833	850	- 7%	- 9%	20.8	2.3
LOUISIANA	12	800	889	777	-10%	+ 3%	17.9	2.7
MAINE	12	190	246	228	-23%	-17%	16.0	1.5
MARYLAND	12	746	788	823	- 5%	- 9%	16.4	2.0
MASSACHUSETTS	12	682	703	677	- 3%	+ 1%	11.6	1.5
MICHIGAN	12	1,606	1,674	1,591	- 4%	+ 1%	17.5	2.0
MINNESOTA	12	595	612	530	- 3%	+12%	14.0	1.5
Mississippi	12	714	691	757	+ 3%	- 6%	27.2	3.1
MISSOURI	12	1,042	1,095	1,046	- 5%	- *%	20.4	2.3
MONTANA	12	181	197	233	-8%	-22%	22.4	2.1
Nebraska	12	294	260	296	+13%	- 1%	18.4	2.0
Nevada	12	307	286	262	+ 7%	+17%	30.5	3.2
New Hampshire	12	190	163	179	+17%	+ 6%	18.0	1.9
NEW JERSEY	12	882	1,053	1,024	-16%	-14%	11.5	1.5
New Mexico	12	537	489	567	+10%	- 5%	35.8	3.3
NEW YORK	12	2,112	2,187	2,269	- 3%	- 7%	11.8	2.2
NORTH CAROLINA	12	1,451	1,580	1,587	- 8%	- 9%	22.6	2.3
NORTH DAKOTA	12	81	104	101	-22%	-20%	12.1	1.2
Ohio	12	1,700	1,699	1,692	+ *%	+ *%	15.8	2.1
Oklahoma	12	651	634	604	+ 3%	+ 8%	19.9	2.1
OREGON	12	622	677	616	- 8%	+ 1%	22.8	2.8
PENNSYLVANIA	12	1,875	1,893	1,924	- 1%	- 3%	15.7	2.2
RHODE ISLAND	12	100	124	100	-19%	0%	10.1	1.7
SOUTH CAROLINA	12	998	1,035	1,080	- 4%	- 8%	29.1	2.7
South Dakota	12	151	146	134	+ 3%	+13%	21.3	2.3
TENNESSEE	12	1,073	1,229	1,216	-13%	-12%	22.1	2.5
TEXAS	12	3,271	3,337	3,188	- 2%	+ 3%	19.5	2.1
Utah	12	302	298	298	+ 1%	+ 1%	18.0	2.4
VERMONT	12	116	128	119	- 9%	- 3%	21.2	2.1
VIRGINIA	12	1,000	1,070	1,021	- 7%	- 2%	16.9	1.7
WASHINGTON	12	777	780	778	- *%	- *%	17.1	1.9
West Virginia	12	468	461	469	+ 2%	- *%	24.7	3.1
Wisconsin	12	816	811	815	+ 1%	+ *%	17.0	1.9
WYOMING	12	127	155	129	-18%	- 2%	25.9	2.1
Puerto Rico#	12	481	600	644	-20%	-25%	17.7	—
Virgin Islands#	12	12	18	16	-33%	-25%	21.6	—
		— CANADIAN PROVINCES —						
Alberta	12	488	461	509	+ 6%	- 4%	30.8	
British Columbia	12	583	607	527	- 4%	+11%	27.6	

#Not included in the TOTAL U.S. death count or rates.
*Less than 0.5%.


NATIONAL ESTIMATE
12 MONTHS
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S. C.
FLA.
INCREASE OR NO CHANGE
DECREASE 8% AND OVER
DECREASE - UNDER 8%

MOTOR-VEHICLE DEATHS AND CHANGES TOTAL U.S.

Month	Deaths				Percentage Changes		
					Corresponding Month		4 Months Moving Avg. +
	1986	1987	1988	1989	1987-1989	1988-1989	1988-1989
January	3,274	3,301	3,390	3,530	+ 7%	+ 4%	+ 2%
February	2,814	2,997	3,130	3,150	+ 5%	+ 1%	+ 2%
March	3,559	3,517	3,600	3,620	+ 3%	+ 1%	+ 4%
April	3,607	3,621	3,760	3,540	- 2%	- 6%	- *%
May	4,331	4,264	4,210	3,860	- 9%	- 8%	- 4%
June	4,460	4,279	4,320	4,080	- 5%	- 6%	- 5%
July	4,704	4,472	4,720	4,440	- 1%	- 6%	- 6%
August	4,895	4,815	4,550	4,330	-10%	- 5%	- 6%
September	4,197	4,300	4,370	4,250	- 1%	- 3%	- 5%
October	4,244	4,535	4,520	4,330	- 4%	- 4%	- 4%
November	3,920	4,169	3,980	3,790	- 9%	- 5%	- 4%
December	3,860	4,020	4,350	4,080	+ 2%	- 6%	- 5%
TOTAL	47,865	48,290	48,900	47,000	- 3%	- 4%	

The 1986 and 1987 figures are from the National Center for Health Statistics. The 1988 and 1989 figures are National Safety Council estimates.

+Four Months Moving Average is based on changes between the totals for four months instead of one month. For example, the December figure shows the change between the totals for September - December, 1989, and September - December, 1989, etc. Adding several months together tends to smooth out single month changes which may be affected by differences in the number of weekends in month from one year to the next, random variations, etc.

*Less than 0.5%.

CONFERENCE ANNOUNCEMENT

INFORMATION SYSTEMS FOR HIGHWAY SAFETY:

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Nearly every highway safety discipline (enforcement, engineering, research, program management and motor vehicle administration) requires TRAFFIC RECORDS for problem identification, project planning and program evaluation. That's why these special sessions will deal with such critical topics as:

- commercial driver laws
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- accident location systems
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- tort liability
- optical disk/optical scanning technology
- enforcement's use of new technology
- integrating court records into traffic records systems
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- and development of EMS systems
- and some 60 or more interesting and educational subjects

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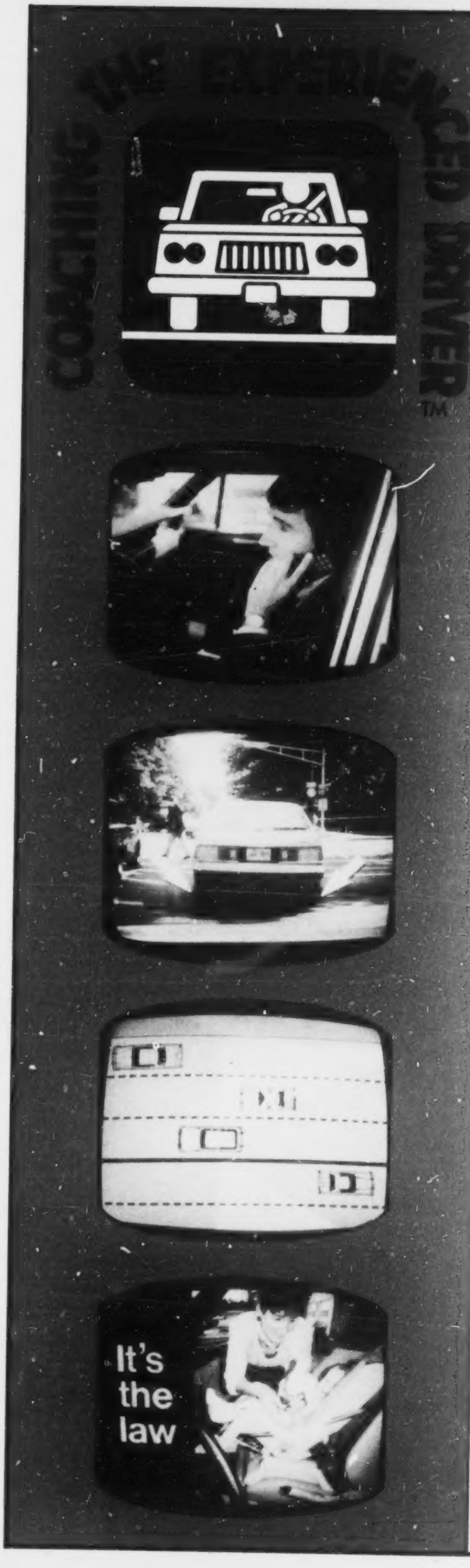

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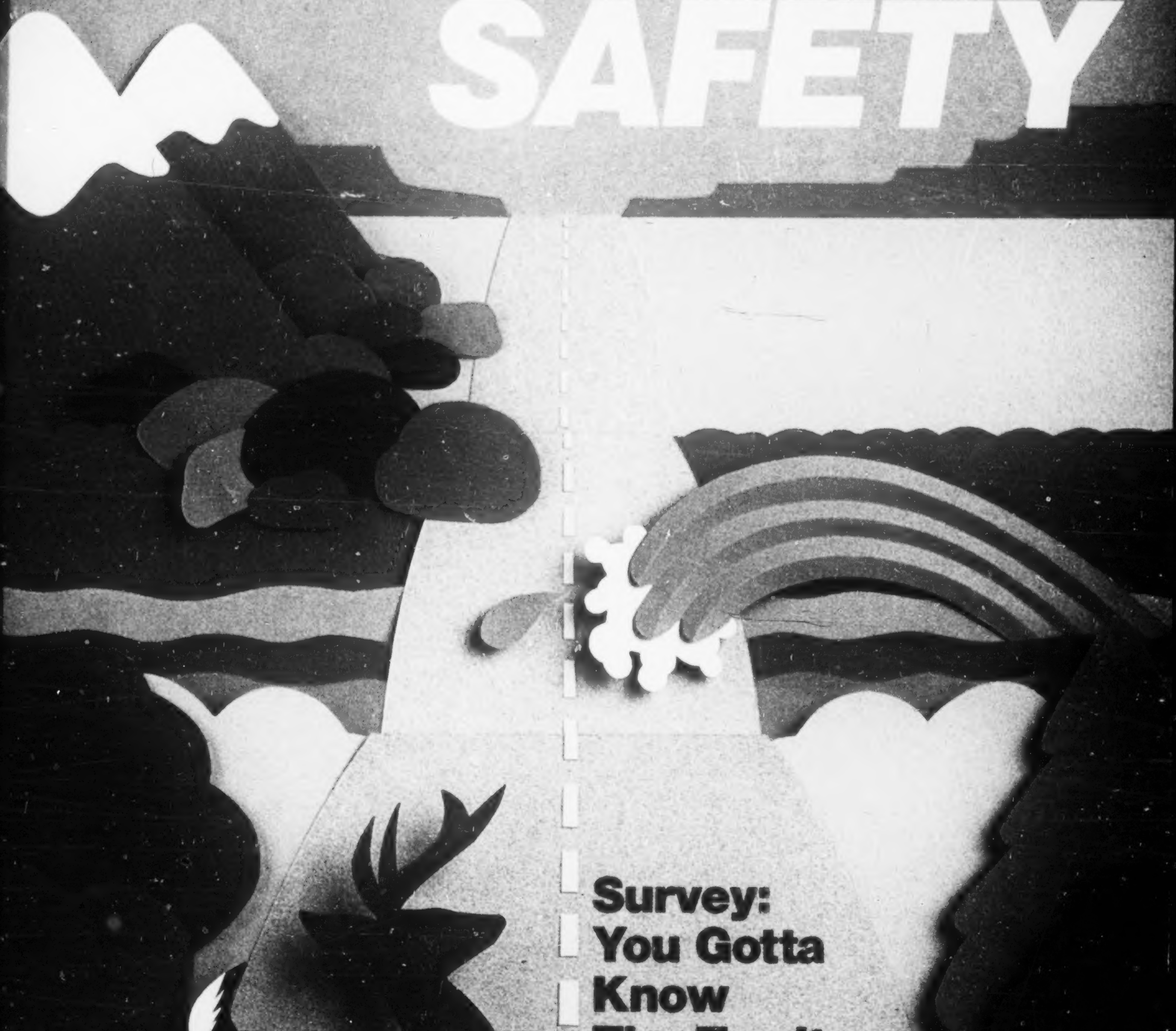

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JULY/AUGUST, 1990

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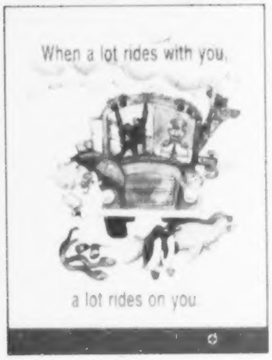
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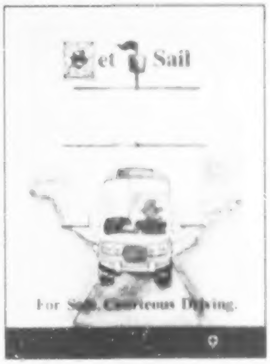
Set Sail
For Safe, Courteous Driving.

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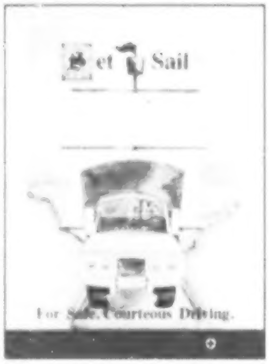
Set Sail
For Safe, Courteous Driving.

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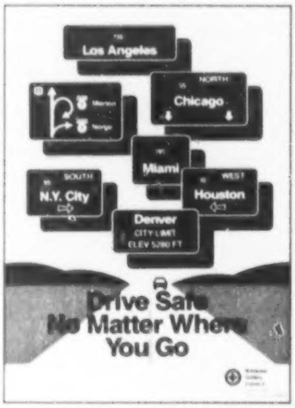
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No Matter Where
You Go

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National Safety Council
P.O. Box 11933
Chicago, IL 60611

Publisher: Kevin H. Axe (312) 527-4800, ext. 7101

Editorial Director: Maureen Glass (312) 527-4800, ext. 7103

Coordinator: Richard Frisbie

Managing Editor: Austin Weber (312) 527-4800, ext. 7108

Associate Editor:
James W. Lahey

Art Director: Anne F. Malone

Cover: Constructs Studio, art; Terry Vitacco, photo

Director, Publications Marketing: Kevin Shanley (312) 527-4800, ext. 7401

Advertising/Circulation Manager: Joel Wakitsch (312) 527-4800, ext. 7404

Advertising Sales:

East
Clint Pross (312) 527-4800, ext. 7408
Midwest
Linda Parker (312) 527-4800, ext. 7403
National
Diane Borker (312) 527-4800, ext. 7402

Advisors:

Noel Bufe, Ph.D., *director, Traffic Institute, Northwestern University, Evanston, Ill., vice president for traffic;* Walter D. Weiss, *group director of safety, Leaseway Transportation Corp., Birmingham, Mich., vice president for motor transportation;* Neil Boot, *director, driver improvement programs;* Ted E. Dudzik, *traffic law enforcement and police records specialist;* Jan Hazlett, *school transportation safety specialist;* Tim Kennedy, *occupant restraint specialist;* Al Lauersdorf, *alcohol programs administrator;* John McCarthy, *manager, program development and training, driver improvement programs;* Harold Thompson, *manager, highway traffic safety services;* Lester B. Sokolowski, *director, motor transportation;* James Solomon, *administrator of training, driver improvement programs;* Richard L. Tippie, *director, transportation safety.*

TRAFFIC SAFETY (ISSN 0041-0721) is published bimonthly by the NATIONAL SAFETY COUNCIL, 444 N. Michigan Ave., Chicago, Ill. 60611. Copyright © 1990 by National Safety Council. Printed in U.S.A. Second Class postage paid at Chicago, Ill. and at additional offices. POSTMASTER: Send address changes to National Safety Council, 444 N. Michigan Ave., Chicago, Ill. 60611.

U.S. Subscription rate: $15.20 to members of the National Safety Council; $18.98 to non-members. Quantity and foreign rates available on request.

National Safety Council
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July/August 1990

National Safety Council

TRAFFIC SAFETY

Vol. 90 No. 4

SIGNS OF TROUBLE 8
HENRY WOLTMAN
Local governments courting damages

BIG WHEELS 14
THOMAS FRISBIE
A growing demand for new truck drivers raises safety questions

ALTERNATE FUELS SPARK NEW CONCERNS 18
MICHAEL P. MALONE
Clean Air Act focuses attention on fuel safety

ACCIDENT RECORDS A LOT TO HUSK 22
More efficient office helps Nebraska save lives

FEDERAL AGENCIES UNVEIL HIGHWAY AGENDA FOR THE 1990s 24
JIM CASTELLI
Officials take tough stance on safety

TRANSPORTATION SAFETY TURNS AGGRESSIVE 26
VISION '90s Congress and Exposition, Oct. 28, in Las Vegas

4 Today's Traffic
5 Shortcuts
6 Survey
7 Two-Way Street
11 Events
13 New Products
30 Library
32 Statistics

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Home Office, 444 N. Michigan Ave., Chicago 60611, (312) 527-4800.

Printed in U.S.A.

Stock No. 311.03-040

TODAY'S TRAFFIC

Cash for Reporting Drunk Drivers

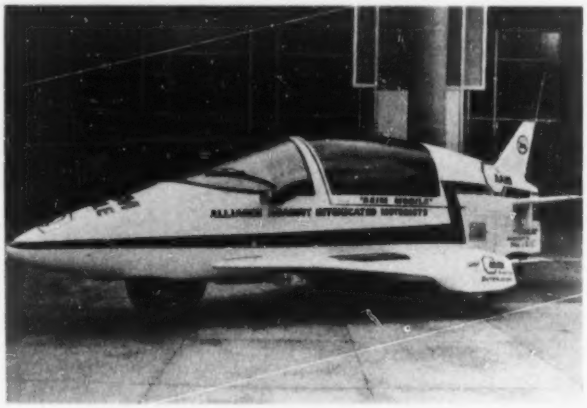
In an effort to beef-up its Drunkbusters program, the Alliance Against Intoxicated Motorists (AAIM) Schaumburg, Ill., is offering cash to anyone who reports a drunk driver on Illinois highways.

Callers receive $100 if the driver they report is later arrested by Illinois State Police and charged with driving under the influence. AAIM recommends that drivers look for the following warning signs of drunk driving: repeated drifting from lane to lane or on and off the road, tailgating, driving with headlights off at night, stopping suddenly or accelerating rapidly, turning too widely or narrowly, reckless speeding or using inappropriate turn signals.

Informants should note the suspect's license plate number, description of the car and its location and direction before calling the (*)999 number. The calls, which can only be made on a mobile phone, go through the Cellular Express line of the Illinois Department of Transportation and are free.

The program "now makes it possible for thousands of extra eyes to alert police about drunk drivers on Illinois highways," says Paul Froehlich, executive director of AAIM.

The photo shows the "AAIM Mobile," used for promotional activities.



Curbing Risky Teen Behavior

To stem the alarming number of automobile crashes and deaths caused by young drivers, an increasing number of states are using motor vehicle laws to clamp down on young people who abuse drugs and alcohol, according to the American Automobile Association.

The group's *1990 Digest of Motor Laws* found that 34 states and three Canadian provinces have enacted laws to regulate or postpone licenses for young people convicted of drug or alcohol offenses.

A new tool to measure risk-taking attitudes in youths may help educators change the dangerous behavior by counseling new and soon-to-be drivers found to be at risk. The *Young Driver Attitude Scale* was developed jointly by the AAA Foundation for Traffic Safety and Columbia University.

Automobile accidents account for nearly half of all deaths of 16- to 19-year olds. And teenagers are not only killing themselves, but are increasingly involved as drivers in crashes in which others are killed, according to studies.

The diagnostic 70-item questionnaire is broken down into seven areas commonly associated with risk-taking behavior: speeding, seat belts, safe driving, drinking and driving, riding with an unsafe driver, "myself" and concern for others.

The *Young Driver Attitude Scale* will be distributed to schools in the U.S. and Canada for driver and health education classes. For information, write to AAA Foundation for Traffic Safety, 1730 M St., N.W., Washington, D.C. 20036 or phone (202) 775-1456.

Help for the Handicapped

The U.S. Department of Transportation has proposed guidelines for states to adopt a uniform system of parking for the handicapped. The measure is designed to increase the safety and alleviate the parking problems of disabled people who travel between states.

The guidelines developed jointly by the Federal Highway Administration and the National Highway Traffic Safety Administration require that:

- The International Symbol of Access (i.e., a wheelchair) is the only recognized symbol for the identification of vehicles used to transport people with disabilities. This should be used on special license plates and removable windshield signs.
- States recognize license plates and handicap signs issued by other states and countries.
- States establish design and construction standards for parking spaces reserved for disabled people.

Safety for Seniors

Older drivers who participate in exercise, stress reduction and driver training programs can improve their driving skills, studies have found. As a result, an increasing number of groups nationwide are offering such programs to seniors.

Although age alone is a poor predictor of driving performance, the aging process causes changes in a person's vision, hearing, reaction time and decision-making ability, according to Thomas J. Carr, director of the safety and international department of the Motor Vehicle Manufacturers Association.

"55 Alive/Mature Driving" is a workshop sponsored by the American Association of Retired Persons (AARP) to help senior citizens improve their driving skills. For information, contact AARP, 1909 K St., N.W., Washington, D.C. 20049.

Several state licensing facilities offer "Senior Service" days when older people are given more individual attention and don't have to stand in long lines.

Experts predict that as the older population continues to increase, so will the need for such programs.

Carr has these safety suggestions for older drivers:

- Make safety belt use a habit;
- Know the roads and ask passengers to help navigate;
- Don't mix medications and motoring;
- Avoid driving at dawn and dusk, the hardest times of the day to see objects clearly and judge distances accurately.

Rewarding Heroic Truckers

Goodyear has announced its 8th annual search for "America's outstanding heroic truck driver." A $20,000 U.S. Savings Bond will be awarded to the winner at a special ceremony during next year's Daytona 500 auto race in Daytona Beach, Fla. Runners-up receive a $5,000 U.S. Savings Bond.

Nominations for "heroic deeds or acts of unusual humanitarianism above and beyond the call of duty" that occur between Oct. 1, 1989, and Sept. 30, 1990, will be accepted through Oct. 15, according to Goodyear.

Last year's trucker-hero, Rick McFadden of Lexington, Ohio, rescued two motorists from a smoking, overturned car.

To qualify, drivers must work full-time (either for a truck line or as an independent driver) and operate a truck-trailer rig with at least 14 wheels.

Entry forms are available from: Highway Hero Award Nomination Headquarters, 2100-201 N. Woodward Ave., Bloomfield Hills, MI 48013.

Profile of a Drunk Driver

Traffic offenders jailed for drunk driving (DUI) differ substantially from other inmates, a recent AAA Foundation for Traffic Safety study found.

Seventy-five percent of jailed traffic offenders were arrested for drunk driving, the most frequent cause of arrest from 1975 to 1988. In 1988, there were 1.8 million DUI arrests, nearly double the number for 1975, according to FBI records.

The study, conducted by researchers of the criminal justice departments of Illinois State University and the Rochester Institute of Technology, found the typical jailed DUI offender, compared to other inmates, to be older, white, married, with dependents and employed full-time.

DUI offenders were more likely to have a criminal history of drinking or traffic offenses, but less likely than other inmates to have a history of more serious crimes. And they were less likely to have tried illegal drugs.

Safety experts are concerned about "repeat offenders, many of whom have serious alcohol abuse problems and have come into the justice system several times with no apparent impact on their alcohol abuse behavior," says Sam Yaksich, Jr., executive director of the AAA Foundation for Traffic Safety.

Researchers point out that the data under-represents young DUI offenders, because jail sentences are seldom given to first offenders, many of whom are young, "early-stage" abusers.

SHORTCUTS

Smart Cars En Route

The use of advanced technology to improve highway transportation and safety with "smart" cars received a major boost at the recent National Leadership Conference on Intelligent Vehicle-Highway Systems (IVHS) in Orlando, Fla.

Conference participants agreed to create a national organization to combine the efforts of the various groups in the public and private sector that work for highway safety. Such partnerships already exist in Europe and Japan.

"Smart" cars rely on state-of-the-art electronic equipment which guides the vehicles and warns of dangerous conditions.

The proposed national organization, for now dubbed the Electronic Highway Transportation Association of America (ELECTRANS), will be a non-profit scientific and educational corporation to advance the research, development, testing and implementation of IVHS technology.

Members will include businesses and trade associations from the private sector, government agencies, universities, international organizations, and interested public and private organizations. The target date for incorporation of ELECTRANS is December 1990.

Orlando Test Site

Agreement was reached at the May conference to use the rapidly developing area around Orlando, home to popular tourist attraction Disney World, as the test site for the new technology. Development of the $8 million program, called TravTek (travel technology), is already underway, with operations to begin in early 1992.

Cooperating in the comprehensive project are the U.S. Department of Transportation, the Florida Department of Transportation, the city of Orlando, the American Automobile Association and General Motors Corp., which is providing 100 specially equipped cars.

Objectives of the study are to determine the system's technical feasibility, user acceptance and reduction in travel times. Potential benefits are increased safety, fuel savings and improvements in air quality.

TravTek will provide electronic navigation assistance, real-time traffic information, route selection and other information, including special events in the Orlando area.

GM's role in the study is to be overall program manager and systems engineer. The firm will produce the vehicles with the necessary on-board navigation and communication devices such as electronic maps, symbolic displays and a synthesized voice system.

The American Automobile Association (AAA) is providing its data base of maps, events, hotels, restaurants and other information supplied on-line to drivers.

"TravTek will showcase our ability to provide that information and make driving a more pleasurable experience," says AAA president James B. Creal.

SURVEY

YOU GOTTA KNOW THE TERRITORY

Survey inquires about local conditions

CROSSING the Midwest or the Great Plains on the interstate system, a driver may get the feeling that every mile is just like the last one, only longer. Even in more scenic areas, highway design tends to be similar.

But traffic safety professionals in various parts of the country sometimes have to deal with miles that are unique.

- Capt. Lee Deno of the California Highway Patrol is shocked by the dozens of illegal aliens who have been killed trying to run across Interstate 805 and Interstate 5 after slipping across the nearby Mexican border. Smugglers hired to guide them often try to lead about a dozen at a time across the highway.

They walk in single file, anxious not to lose contact with the rest of the group.

"The first people to cross will look and see that it is reasonably safe and they will start running", notes Deno. "Usually it is the people at the end of the line that get struck and killed."

- In the desert Southwest, strangers frequently get into trouble on secondary roads during the summer rains. Surrounded by barren rocks and cacti, they don't realize that dips in the highway cross the bottoms of watercourses. If they're not alert, they could be in one of those arroyos when a flash flood with a wall of water eight feet high comes racing round the bend from a distant rainstorm.

- In Illinois, for some reason, metal coils have a way of falling off flatbed trucks and crushing cars. Charles McLean, Chicago area operations engineer for the Illinois Department of Transportation, says the Chicago area has a high number of such accidents because it's a center both for steel production and for trucking.

In your area, do you have unusual traffic safety problems involving any of these hazards (probably rare elsewhere)?

HAZARDS	EXPLAIN
Pedestrians	
Animals	
Water	
Wind	
Special Vehicles	

Comments:

Steel coils weigh from 20,000 to 49,000 pounds. They're held down by chains. If the chains aren't in top condition and securely fastened, they readily break in a sudden stop and the coil keeps rolling.

- Deer also can be a serious hazard. Because they like forest edges and clearings, there are more deer now in many places than when the U.S. was one vast primeval forest. Michigan alone averages about five fatalities a year resulting from deer running across the road in front of a car.

The Michigan Department of Natural Resources says that several drivers lost control and hit a tree or rolled over in the ditch after swerving to avoid a deer. Others hit the deer first, then rolled over or hit a tree or another car.

Knowledge of such localized hazards can be beneficial for everyone. So TRAFFIC SAFETY invites you to report on any unusual traffic dangers in your area. We'll collect your answers and use them to alert the rest of the traffic safety community.

Comments Invited

Simply tear out the page and send it in. Or if you have to share your copy of TRAFFIC SAFETY with others, you may want to photocopy the page. Then, if we haven't provided enough space, you can write additional comments on the back.

Mail your responses to:
Managing Editor
TRAFFIC SAFETY Survey
National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611

TWO-WAY STREET

Home Free

Group makes offer drinkers shouldn't refuse

YOUR SURVEY asking about cooperation between public and private organizations prompts me to call attention to the service now being offered in Sacramento, Calif., with the cooperation of police, tavern keepers and taxi and tow truck operators.

We use teams of specially trained volunteer drivers (it takes two drivers per car) to cruise drinking places and offer to drive unsafe drivers home free in their own cars while our car follows. Our cars have two-way radios so they can be directed where needed.

The International Good Samaritans have a $300,000 three-year grant from the federal Office of Traffic Safety to develop the program in Sacramento. We also enjoy support from local businesses.

Since the program started in 1985 in the Lake Tahoe area, we have driven home safely 25,000 carloads of people. The hardest part was for our volunteers to convince people to accept a ride for the first time. But the bartenders began calling us to take care of the worst cases, people obviously in no shape to drive.

We're not saying don't drink; we're saying don't drive.

Thomas L. Argo
Executive Director
International Good Samaritans
Rancho Cordova,
Calif.

Bikes Belong on Roads

The bicycling community has been working for years to have bicycles recognized as vehicles by law. Recognized as such, they would be able to be ridden on virtually any road in the U.S.

I take strong exception to Stan Novak of St. Louis. His comments in the March/April issue of TRAFFIC SAFETY comparing the U.S. with Holland are like comparing a canoe with a yacht. The bicycle is important in both countries, but here it is a vehicle of recreation. For going to work, we prefer automobiles or public transportation. *(Novak praised the Dutch system of designated bike lanes.—Ed.)*

Quite frankly, my wife and I want to be able to ride our bikes anywhere we choose. Recently, we completed a trip through the Davis Mountains of Texas. We do not want to be assigned to a government "bike trail" designed at the whim of a non-rider.

Safety is best served by educating the public to accept the bicyclist as part of the road scene.

Ray Burket
President
Texas Traffic Safety Academy
Arlington, Tex.

Dream World

An editorial I read in the *Yakima Herald-Republic* bothers me some.

It noted that traffic-safety officials blame the 65 mph speed limit for fatalities when they increase. But when fatalities decrease, as they have in recent years, the paper sees a "double standard."

The paper quoted Jerry R. Curry, National Highway Traffic Safety Administrator: (The lower fatality rate)

Any Comments?

"Two-Way Street" is *your* forum; a place for ideas and opinions on issues important to traffic safety professionals as well as comments about articles in previous issues of TRAFFIC SAFETY.

Please address letters to "Two-Way Street," TRAFFIC SAFETY Magazine, 444 N. Michigan Ave., Chicago, IL 60611.

Letters may be edited for clarity or because of space.

"means that American motorists are less at risk than ever before. The reduction in traffic deaths during the 1980s reflects our national resolve against drunk driving, increased safety belt use and a generally heightened awareness of highway safety."

The *Herald-Republic* commented: "Let's at least take the onus off the speed limit increase. Now, even according to the government, it's all right to go faster as long as you're sober, pay attention and wear a seat belt."

The National Safety Council has its job cut out to sell American motorists on the hazards of 65 mph as we drive in soundproof living rooms on wheels down the freeway, in a dream world, surrounded by stereo music, thinking accidents always happen to someone else.

Ken Kohagen
Safety Officer
Yakima Transit
Yakima, Wash.

Survey Responses

More anecdotes from the grassroots in response to a questionnaire in our January/February issue about what's really happening with the features of modern cars:

- A person in our office was left hanging in her seat belt when the vehicle she was driving came to rest after a collision. She exited the car via the sun roof.
- At night after a party, a couple with 40 miles to go turned the driving over to the sober wife. She set the cruise control, then dozed off. Fortunately, she awoke as the vehicle left the road and recovered control before any damage occurred.
- A driver set the cruise control, fell asleep and plowed into a bridge.
- When a car with power locks caught fire, the driver had difficulty getting out.
- An air bag inflated when a motorist struck a deer. The car wound up in the ditch.
- At least one kind of tape deck has complicated controls that require close attention (a bad thing when drivers are supposed to be paying attention to where they're going).

Well-maintained, brightly reflective signs make this highway situation clear to drivers. At a time when the population is aging and most drivers just don't see as well as they used to, clear signage is more important than ever. (Photos by 3M).

Signs of Trouble

Local governments courting damages

BY HENRY WOLTMAN

Henry Woltman is Senior Specialist for Traffic Research in the Traffic Control Materials Laboratory at 3M. He received a BS degree in industrial engineering from the University of Minnesota in 1952 and joined 3M the same year.

He has been the author and principal investigator of many papers on the visibility of materials which have been published by the Transportation Research Board. He is a long-standing member of TRB and ITE. He is a member of the Signs Committee of the National Committee on Uniform Traffic Control Devices.

IF TWO 747 airliners crashed every week in this country, can you doubt for a second that investigations would be mounted, heads would roll and reforms instituted? The answer is obvious.

Yet, the passenger capacity of two 747s roughly equals the weekly cost in human lives of accidents on our nation's highways.

In addition to the 49,000 people killed every year in traffic mishaps, another 1.8 million people are injured, 150,000 of them permanently disabled. There is no room for doubt: we pay a high price in life and limb for mistakes, miscues and misunderstanding behind the wheel.

Of course, many researchers, engineers, public officials and volunteers are hard at work on improving highway safety. The problem is not being ignored, but safety is not the stuff of high drama. Accidents that don't happen — because someone engineered a safe curve or placed an easy-to-read sign in the right place — don't make headlines.

The nature and condition of the roadway and the information provided by signs have always been key factors in getting safely from Point A to Point B, and concern for safety has traditionally driven research aimed at better roads and better signs.

No More Immunity

In recent years, however, traffic agencies have had to confront an additional reason to pay close attention to road conditions and the signs that alert drivers to them; the loss in the courts of "sovereign immunity." The term — from English common law — means, in effect, that "the king can do no wrong" and is therefore immune to any attempts by citizens to hold him responsible for negligent acts.

When kinging went out of style, republican forms of government nonetheless retained this convenient hedge against accountability. Now American courts are taking a different view. They are allowing tort claims to be brought against governments and their agents. (A tort is a civil wrong or injury, and American law generally allows a person to recover for injuries and property damages due to a willful or negligent act.)

This change in court attitude has created a new set of concerns for traffic agencies. Obviously, it was never enough simply to construct roads or install signs. They had to be maintained. But the new susceptibility to tort claims has forced safety and maintenance agencies to pay much closer attention to the condition and placement of signs.

The reason is not difficult to discern. "What did the drivers know?" and "When did they know it?" are relevant questions in every accident investigation.

Signs at Fault

Much of what drivers need to know is supplied by traffic signs. If a sign at the scene had been knocked over and not replaced; if it could not be read because its reflective surface was dirty or badly weathered; if it was placed too close to the hazard to allow the driver time to react; if one or more of these sign failures was present, who is accountable?

The condition and placement of signs at an accident site are easy questions of fact for an attorney in a tort action to establish, and the potential value to the client is not overlooked.

U.S. courts no longer protect local governments from tort suits.

Earlier this year, Gordon Baca, chairman of the Transportation Research Board Task Force on Torts, told the group that tort claims in 1988-89 cost the state of California $50 million out of pocket, not counting attorney fees, engineering time, and other costs. Baca estimated that tort costs for traffic agencies nationwide were about $1 billion in 1989. The *Engineering News Record* reported last October that claims against traffic agencies have increased 1,500 percent in the past 15 years.

One can argue — and with considerable justification — that such trends are more the fault of greed and a growing eagerness to sue than of lax professional attention to roadway safety. The argument may even have some impact eventually, but hopes for the future do not change the current facts: more and more juries are holding government agencies accountable.

Lax Procedures

Moreover, the greed-and-litigiousness argument is not entirely convincing. Research and court actions are revealing that the sign maintenance procedures of most traffic agencies are not reassuring. Last August, the Federal Highway Administration (FHWA) noted that "only a small number of states maintained statewide inventories of their traffic signs . . . very few states evaluated the performance of their highway signs or provided for a periodic replacement program."

Not surprisingly, the courts' interest in accountability has spurred efforts to determine standards by which to judge it. On this topic, the Manual of Uniform Traffic Control Devices (MUTCD) has been some help but also the source of some confusion. The MUTCD does set forth standards, but critics point to confusion in use of such terms as "shall," "should" and "may" and a failure to distinguish clearly between background and how-to information on the one hand, and standards on the other.

Roy Anderson, a professional engineer with experience as an expert witness for both plaintiffs and defendants in tort cases, thinks it's easy to overemphasize the should-shall-may problem. "Juries will decide whether it was reasonable to have a sign up," he

Hardy St 4
Laurel 33

Worn-out signs can lose so much of their reflective characteristics that they make night driving dangerous. A sign-maintenance program would replace signs before they reach this condition and head off law suits against the local government responsible.

has stated. "Whether the Manual says 'shall, should, or may' may not carry much weight."

The MUTCD has also been criticized for inadequate treatment of newer electronic, changeable-message signs and for its failure to set standards for reflectivity levels. The Federal Procurements Act of 1985 does state that signs should be replaced when they have lost 50 percent or more of their "original" reflectivity, but the MUTCD and state manuals are silent on the subject.

Minimum Brightness

At least partially in response to such criticism, the FHWA is looking at minimum brightness requirements and has promised a thorough revision of the MUTCD in three to five years. Meanwhile, the Office of Traffic Operations has initiated a sign-upgrading program for all states. The "Road to Better Highway Signing" program calls for states to create accurate inventories, establish orderly replacement and refurbishing schedules and begin evaluations of sign performance and program effectiveness.

The value of uniform standards for sign size, brightness, placement and replacement is hardly debatable. Nonetheless, it would be a mistake for state and local traffic agencies to postpone action until national standards have been agreed upon and fully published. First, the broad outlines of what will be covered by such standards are already visible. Second, any program that includes reasonable standards and demonstrates consistent, systematic implementation is virtually certain to enhance safety and also stand up well in court.

The elements of a sound sign maintenance program are no mystery. Traffic signs are subject to a variety of assaults but a list of their "enemies" is relatively short. Signs can be knocked down, bent over, or twisted aside by passing vehicles; they are shot at and hit by highway sharpshooters; and they are soiled by splashed mud. Graffiti artists "decorate" them by night, and the sun smites them by day. With the exception of weather damage, which is subtle and evolutionary, the resulting injuries are not difficult to identify.

System Counts

The key to effective sign maintenance is system. Generally speaking, two sorts of tasks should be routinized: those that are essentially insignificant and not worthy of a real decision each time they are performed, and those that are very significant and demanding of careful execution. Putting on one's left shoe first is an example of the first; readying an airliner for takeoff is an example of the second.

For several reasons, a sign maintenance program falls into the second category. First, as with the airliner, there are simply too many details to entrust to memory. In most jurisdictions, the number of signs in use will total at least four figures, and often five. Each sign is a "detail," and that many details can only be managed systematically. Second, the consequences of overlooking one of the details can be costly, even tragic.

So what are the elements of a systematic sign maintenance program?

Inventory

All signs in a jurisdiction should be itemized by location, installation date, type, size, facing direction, substrate material and the grade and manufacturer of reflective sheeting. Obviously, computers provide the ideal technology for managing such a data base, but printed forms for manual record keeping are also available and can be used efficiently.

State maintenance not 'reassuring,' says FHWA.

Data collection in the field can be done manually, but video and photologging techniques for collecting the data are rapidly evolving. Perhaps the most advanced video logging and retrieval equipment is now being used in Norway. The Norwegian road system is being video-logged by still-frame video cameras. Location and condition data can be edited onto the record which is stored in final form on video disk.

At least one computer software package is available to store a sign inventory, and other software has been developed to record, file and manipulate the kinds of data needed for an adequate inventory. In a report for the Transportation Research Board in 1988, R. A. Cunard stated that an inventory of street and highway signs should:

1. List all signs on the right-of-way.
2. Have the flexibility to add, delete and move entries by location.
3. Reflect maintenance work completed.
4. Maintain historical records of work done on each sign.
5. Be accessible by sign location.
6. Present information in words rather than with numerical or letter codes.
7. Be user friendly.

If a jurisdiction cannot afford a computerized inventory, a low-tech alternative is available. A sign's installation date can be recorded on the sign itself by affixing a sticker. Having the information on the sign allows maintenance crews to determine on the spot that a sign is approaching the end of its effective life and make a replacement. Sticker colors and placement can be varied to permit easy recognition from a vehicle.

Maintenance

Once an inventory is in place, a regular program of inspection and replacement should be implemented, and all activity should be recorded in the inventory. When a program has been in effect and tracked by computer for several years, patterns of wear and abuse will probably emerge. Users may discover, for example, that signs at certain locations tend to suffer certain kinds of damage. Complaints of sign visibility and legibility may sometimes be heard from older drivers, particularly for signs needed for finding the way — street name signs and route markers, for example. Reviews of the site may suggest alternative sign locations, larger and brighter signs, greater height or wider offset. Upgrading specifications to higher performance materials also can improve durability and readability.

Although it is essential to have the ability to track problems with individual signs or locations, some jurisdictions have also devised mass replacement schedules. One city, for example, has divided its territory into five areas and replaces all signs in one area each year. In this way, all signs in the city are replaced every five years. The system no doubt replaces some north-facing or otherwise sheltered signs that would not require a five-year schedule, but this is a relatively small disadvantage, and the efficiencies of the "clean sweep" may well offset it.

Extra-bright reflective materials help important road signs stand out from urban visual clutter.

Evaluation

The critical performance issue is reflectivity. Signs that have been knocked down, marked up, or shot through are easy to identify. Determining when a sign has lost 50 percent of its reflectivity is quite another matter. If the maintenance person does not have a retroreflectometer, the sign must be inspected at night using the low headlight beam. Without a retroreflectometer, there is no way to make a reliable judgment in the daytime.

Fortunately, new technology is on the way. One American company has developed a device to measure the retroreflectivity of pavement markings from a moving vehicle. At present, the machine costs about $25,000. Development of a similar device for in-motion "reading" of road signs is underway. Obviously such technologies, along with national retroreflectivity standards, will do much to enhance the nighttime performance of America's road signs.

Summary

Better sign maintenance is a critically important safety goal. It is not a particularly difficult challenge, but it is made complex by the 50 to 100 million signs that stand along our roads. The goal can be achieved — the challenge met — by following three fairly simple rules:

1. Use the best, most durable materials available. They may cost more in the beginning, but they will save money over time.

The key to good sign maintenance is 'system.'

2. Implement a systematic program of inspection and replacement, as described in the National Cooperative Highway Research Program (NCHRP) report number 157, "Maintenance Management of Street and Highway Signs."

3. Follow the recommendation of the Transportation Research Board's report number 218, "Transportation in an Aging Society" on the needs of older drivers, and install bigger and brighter signs. Larger and brighter signs benefit all drivers, but most especially older drivers.

It is truly a simple strategy. And agencies that follow it will keep more of their motorists happy and their engineers out of court.

EVENTS

Undercover Underwater

JULY

Vehicular Homicide/DWI Conference — July 8-12, Evanston, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60204. (800) 323-4011.

At-Scene Accident Investigation — July 9-20, Evanston, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60204. (800) 323-4011.

Officer Fitness Seminar — July 10, Evanston, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60204. (800) 323-4011.

Information Systems for Highway Safety: 16th International Forum on Traffic Records Systems — July 16-19, Bal Harbour, Fla. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, ext. 8405.

Advanced Drug Enforcement — July 30, Evanstion, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60204. (800) 323-4011.

AUGUST

Managing Small & Medium-Sized Police Departments — Aug. 6-17, Evanston, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60204. (800) 323-4011.

Search & Recovery/Rescue Underwater Investigation — Aug. 13-17, Evanston, Ill. — Northwestern University Traffic Institue, 405 Church St., Evanston, IL 60204. (800) 323-4011.

Security Management Seminar —

Aug. 13-15, Evanston, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60204. (800) 323-4011.

Field Training Officers Program — Aug. 20-24, Evanston, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60204. (800) 323-4011.

Organizational Planning — Aug. 20-24, Evanston, Ill. — Northwestern University Traffic Institute, 405 Church St., Evanston, IL 60204. (800) 323-4011.

SEPTEMBER

5th Annual Emergency Vehicle and Fleet Management Conference — Sept. 20-22, Nashville, Tenn. — The Conference Corporation, P.O. Box 805, Solana Beach, CA 92075. (619) 481-5267.

OCTOBER

4th International Winter Weather Workshop — Oct. 10-12, St. Louis, Mo. — Surface Systems, Inc., 10420 Baur Blvd., St. Louis, MO 63132-1905. (800) 325-SCAN or (314) 569-1002.

SAE 8th Annual Colloquium on Brakes & Educational Display — Oct. 14-17, Atlantic City, N.J. — Society of Automotive Engineers, Inc., Dept. 935, 400 Commonwealth Dr., Warrendale, PA 15096-0001. (412) 772-7131.

NOVEMBER

SAE Stapp Car Crash Conference — Nov. 4-7, Orlando, Fla. — Society of Automotive Engineers, Inc., Dept. 935, 400 Commonwealth Drive, Warrendale, PA 15096. (412) 772-7131.

JANUARY 1991

Symposium on Work Zone Traffic Control — Jan. 18-19, Orlando, Fla. — Federal Highway Administration, (703) 285-2517; or Bellomo-McGee, Inc., 8330 Boone Blvd., Vienna, VA 22182. (703) 847-3071.

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The 14-by-9-inch white sign printed in fluorescent red paint has a patented magnetic base that firmly adheres to car bodies to prevent it from being blown off. The message is also available in French, German, Spanish and Italian. — **D & D, Ltd.,** Dept. Com, 1306 Hepburn Ave., Louisville, KY 40204.

Brake Repair Kits

Replacement parts, repair kits and gasket sets for Jacobs engine brakes used on the Cummins 855 C.I. series diesel engine are now available. The parts are fully interchangeable.

The packaged kits contain the parts necessary to perform engine tune-ups, minor brake repairs or a complete brake overhaul. The brake kits contain both types of crossover gaskets and the premium valve cover gasket. — **Korody-Colyer,** 700 W. Artesia Blvd., P.O. Box 9059, Compton, CA 90224-9059.

Highway Markers

The newly designed base of the Stimsonite Model 66 construction zone pavement reflective marker makes it adhere to the pavement, greatly reducing losses of the safety devices.

The new design allows adhesive to flow into cavities in the patterned base, creating a strong bond between the marker and the base. The markers are applied to the pavement with a specially formulated bituminous adhesive that absorbs shock and acts as a thermal buffer between the marker and pavement during temperature changes. The adhesive can be applied in temperatures as low as 35 degrees Fahrenheit.

The raised surface of the reflective markers alerts the driver who is drifting into another lane.

The 4-inch-by-4-inch polymer markers are available in yellow or white, with one-way or two-way reflectors that are highly visible day or night and in the rain. — **Stimsonite Products,** Amerace Corp., 7542 N. Natchez Ave., Niles, IL 60648.

Flat-Proofing Tires

Three new Mistaflex tire-filling products (S9040, S9050 and S9060) have been introduced. The soft, rubber-like urethane replaces the air in pneumatic tires on off-the-road commercial and industrial vehicles. This solid core resists cuts and punctures that normally cause flats that can lead to accidents.

The Mistaflex-filled tires are recommended for such harsh-surfaced areas as steel mills, strip mines, scrapyards, construction sites and lumberyards. The product is not intended for tires on cars or other on-road vehicles.

Because Mistaflex does not contain the toxic product toluene diisocyanate (TDI), it is exempt from EPA and OSHA laws and regulations that apply to products that use TDI. — **MarChem Corp.,** 2500 Adie Rd., Maryland Heights, MO 63043.

Towing Mirror

This product easily attaches to a vehicle's side-view mirrors to expand a driver's field of vision when pulling objects such as trailers. The extended-view mirror can be adjusted to allow the driver to see approaching traffic and to safely make maneuvers that are often tricky when towing. The 5-inch-by-6-inch mirror is corrosion resistant. —**Minesse Enterprises,** P.O Box 66317, Chicago, IL 60666-0317.

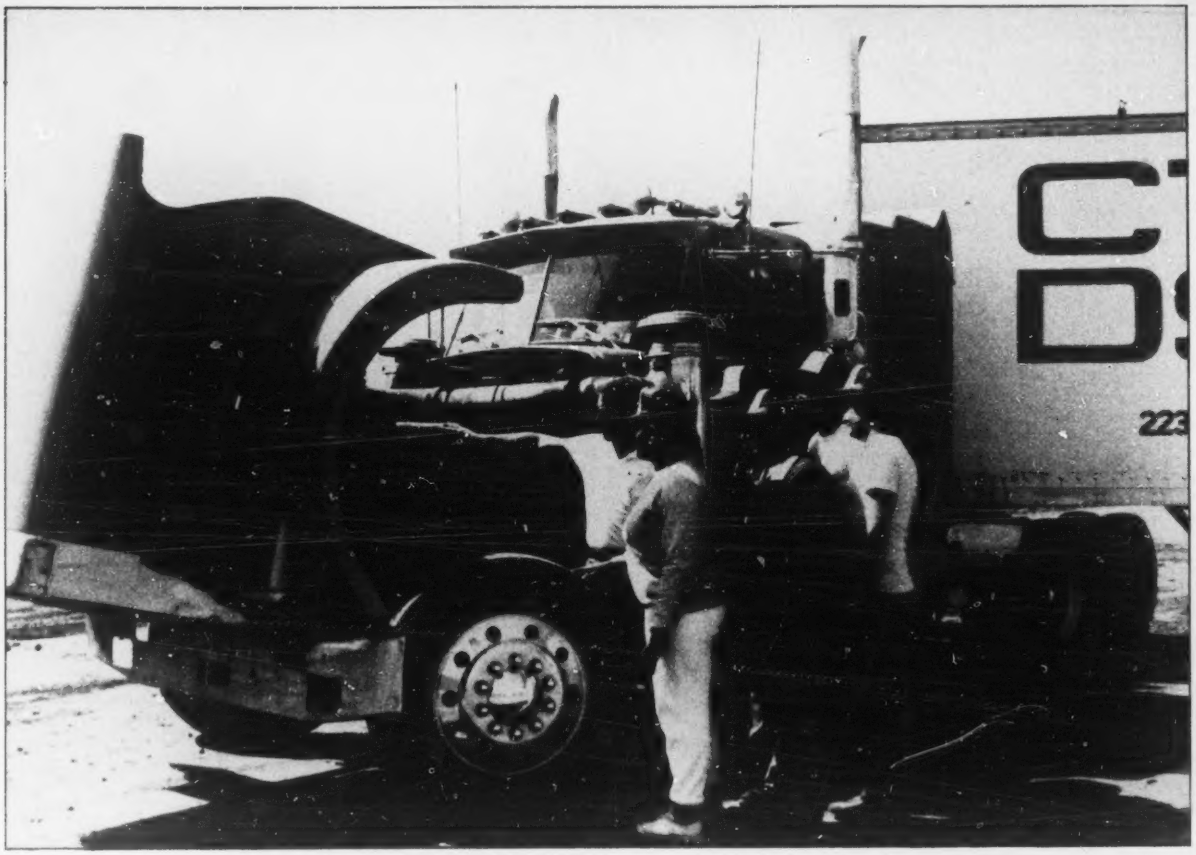
Movement Sensor

The Vehicle Reverse Sensor Switch (SRD-100) activates warning devices such as back-up alarms or warning lights whenever the truck to which it is connected moves backward at least 15 inches. The electronic sensor can detect the reverse movement whether the ignition is on or off, or whether the vehicle is in or out of gear. The warning devices alert the operator and those in the area that the vehicle is moving. — **Preco, Inc.,** 415 N. Maple Grove, Boise, ID 83704-8241.

Grabber Jaws

Newly designed "grabber jaws" are now available for the Hurst Jaws of Life rescue system. They make it easier for users to maintain the necessary positioning of spreaders during emergency extrication procedures.

The unique tips of the jaws actually bite into the material during the spreading process, providing a more stable grasp. — **Hale Fire Pump Co.,** 700 Spring Mill Ave., Conshohocken, PA 19428.



Student truck drivers get organized hands-on training at one of the schools now graduating 40,000 to 45,000 new truck drivers a year. Industry experts say that's better than "driving around the block until they get the hang of it." (Photos: Chicago Truck Driving School.)

BIG WHEELS

A growing demand for truck drivers raises new safety questions

BY THOMAS FRISBIE

THIS SPRING, Edward Kynaston saw a sign on Elk Grove Boulevard in Elk Grove, Calif., that he thinks has a lot to do with how safe highways will be in coming years.

Kynaston is president of the Professional Truck Drivers Training Institute of America. The sign, which was near his headquarters, advertised health-care insurance, management training and $6 to $8 an hour to start—for working in a fast food restaurant.

To Kynaston, the sign also illustrated just how hard it is to keep experienced, top-quality truck drivers on the road these days.

"With $6 to $8 an hour (and some overtime), you can make $20,000 a year on your first job. You don't necessarily make much more (to start) as a truck driver, and you are away from home a lot, and you drive 10 hours a day, and you have to unload the truck at the end of that day," says Kynaston, whose organization represents 20 companies that operate 35 truck-driving schools in 22 states. "There are not that many people around anymore who want to be truck drivers."

That might seem like a minor problem best left to the personnel offices at trucking companies. But industry experts warn it is also a traffic safety problem. That's because experienced, qualified truck drivers at the wheel are one of the most important factors in highway safety. Between 5,000 and 6,000 people a year now are killed in accidents involving heavy trucks, and some 160,000 people a year are injured in commercial-truck crashes. From 1982 to 1987, accidents involving large trucks increased by 12 percent. (The 1987 total was lower than the peak year of 1979.)

Good Attitude Needed

"You don't have to be a surgeon to be a good truck driver, but you have to be a particular kind of person who has the right kind of attitude to drive an 80,000-pound rig safely," says J. Terry Turner, executive director of the Interstate Truckload Carriers Conference. "It takes a certain approach, attitude and patience to drive a truck safely."

Perhaps the first signs in the past decade that truck driving as a career was going to follow a new route were the changes in federal laws in the early 1980s, commonly referred to as trucking deregulation. For truckers, deregulation and the widespread replacement of union jobs with lower-paying nonunion posts have made it harder to keep their salaries in step with the cost of living. That and tighter scheduling, longer hours and stricter enforcement of traffic laws are pushing many long-time truck drivers out of the field.

The National Moving & Storage Technical Foundation has estimated that turnover among truck drivers can be as high as 200 percent a year for some companies. A 1988 ranking of job quality by American References Inc., Chicago, listed truck driving as 236th out of 250 employment categories, lower than such jobs as file clerk and stevedore.

"The problem is that because of the huge competitive pressures to obtain freight orders in today's economy, the only real way to obtain them is to either provide service that is unmatched or to cut the rate, and that is what has been going on for four, five, six years, and it has had an adverse impact on drivers," explains Turner. His organization includes some 600 companies that use 102,000 tractors and 200,000 trailers to move freight through every state but Hawaii and all of Canada. "Their pay hasn't kept up with the national average, and they need to be paid more money for what they do. People don't appreciate what a truck driver does.

Update

One way to cope with the projected driver shortage would be to hook on another trailer behind existing two-trailer rigs.

Then the same number of drivers could cope with 50 percent more freight.

According to the *Wall Street Journal*, the trucking industry is already lobbying in Washington for regulatory approval of a "freight train" that runs on highways instead of tracks.

The proposed rigs would consist of a tractor and three trailers totaling 100 feet in length.

Some opposition has already surfaced from critics raising questions about safety and potential damage to highways.

The average age of truckers is now 40 and increasing.

"It's much easier than it's ever been (to drive a truck) because of advancements in the equipment, but it takes concentration; you have to be constantly aware of where you are and who is around and what potential problems lie ahead. Other people in standard autos don't understand the operating characteristics of trucks, and they think because a car can stop on a dime so can a truck, and it just isn't so.

"People have wrong ideas of how to operate their vehicles in and around trucks. When you operate an 80,000-pound rig, you have to concentrate twice as hard about giving people room to move their vehicles because you need more room to move yours. You have to be aware, when you want to do something simple like change lanes, to look ahead, leave plenty of room, and make sure blind spots aren't hiding a car. When you have got a rig 65 feet long, there is a big blind spot in that thing and you have to be careful. If the drivers of other vehicles on the road had a little respect, we would probably be further ahead in all these traffic safety problems, and we would all be a little safer."

No Respect

The problem is that the drivers of the other vehicles often don't have that respect. And for many truck drivers and would-be drivers, the factors squeezing their pay and making their jobs more difficult mean the job just isn't worth it anymore, even though the U.S. Department of Labor has estimated that trucking is among the occupations that will have the greatest demand for workers in coming years. According to one estimate, some 400,000 to 500,000 truck driving jobs will go unfilled in the 1990s, and it is estimated that 20 percent more truck drivers will be needed by the end of the century.

"What you are going to find is virtually every full-truckload carrier has problems finding truck drivers," notes Kynaston. "They have a retention problem keeping them in the industry, and retention of drivers is important. Some of them literally have trucks parked because they can't find drivers."

That's why, around the country, truck driving schools are gearing up joint efforts ~~with~~ trucking companies to recruit new drivers. Population groups historically overlooked, such as women and newly arrived immigrants, are the most likely sources of new drivers, school officials maintain.

But even if new drivers can be found, they won't be as experienced as some of those who are leaving. And those who are staying are tending, on average, to be older.

"It does cause a problem where you have high turnover rates and large numbers of people coming into the industry who are less experienced," Kynaston comments.

While industry people talk about the need to bring more young drivers into the field, Kenneth L. Campbell, director of the Center for National Truck Statistics at the University of Michigan's Transportation Research Center, says young drivers are more likely to be involved in accidents.

"We've done some work that looks at the age of the driver and (the rate of) fatal accident involvement as a function per mile traveled," explains Campbell. "We've done that with a national population for all vehicles with ratings of over 10,000 pounds.

"The primary finding was the rather dramatic over-involvement of the younger drivers, something like five times the risk of fatal accident involvement," notes Campbell.

But a potential flood of new, younger, inexperienced drivers being recruited to fill vacant jobs isn't the only concern, Campbell says. Right now, because young people have tended not to drive trucks, the average age of truck drivers is rising.

"In general, the truck driver population's age is increasing," explains Campbell. The average age is around 40, although it depends on which segments of the trucking industry you are looking at. There is a general concern in traffic safety with older drivers, with realizing the whole population is aging and the older group is growing. All of the baby boomers are moving through the population. So far, we don't have older people driving trucks, but maybe we will 10 years from now. It's viewed as a potential problem among passenger car drivers, but not one yet for truck drivers.

Nationwide CDL will weed out the worst drivers.

"Truck driving is a pretty hard profession, and historically people have tended to retire by the time they were 50 or so. Whether the driver shortage will have the effect of keeping people in the industry longer than they have been accustomed to, we don't know."

Anyone looking for indications of how truck driving is changing would find another significant sign at the loading docks of an increasing number of factories where "just-in-time" shipping practices are in place. Under just-in-time, shippers and receivers try to move their supplies and products in and out immediately instead of stockpiling them in storage areas.

The goal of just-in-time is to reduce inventory from, say, two-to-four weeks to two-days-to-immediate, which eliminates inventories both on the receiving end and the shipping end.

"Just-in-time is in the mainstream of manufacturing for mid-sized to large companies," explains the president of a company that designs loading docks. "Generally, the [truck's] trailer is your stock room, and not your floor space that you are spending $8 a square foot for."

Another executive, whose company builds loading-dock products, says "On an over-all basis, just-in-time has streamlined manufacturing, cut costs and made a lot of companies much more efficient."

Waiting Increases Stress

But just-in-time hasn't necessarily made the truck driver's job more efficient. In fact, many truck drivers find themselves delayed for hours waiting for a chance to load or unload at a company where just-in-time has crowded the loading-dock.

"The truck driver is generally paid on a per-mile basis, and he basically makes his money when he is out there running, and if his truck isn't moving he isn't making money," Turner adds. "Our problem is that shippers and receivers—customers (using just-in-time)—are hanging up equipment for hours on end, which does not generate pay for the driver.

"Trucks have become warehouses on wheels. (Just-in-time) backs up the trucks at the unloading door or loading door because of very tight schedules, and the trucker is the one who has to pay the price by waiting six hours to get in and out. It is not conducive to keeping good quality people." They may sit four to six hours without compensation.

"When you put it all together, you have working conditions that are not very appealing to most people," says Turner.

Not everything about the future of truck driving is worrisome. Many people inside and outside of the industry are encouraged by the creation of a nationwide commercial driver's license (CDL) for all drivers of large trucks. The CDL program is scheduled to be implemented in all states by April 1, 1992.

To obtain a CDL, truck drivers will be required to pass a written test and, if they are to drive a truck weighing more than 26,000 pounds, to take the driving test in the type of truck they intend to operate. The CDLs also will be part of the new Commercial Driver's License Information System, which will keep a nationwide record of infractions. The idea is to put an end to the practice by some truck drivers of obtaining driver's licenses in numerous states and then "spreading around" traffic tickets to avoid having their licenses revoked.

One Million CDLs Issued

Stanley Hamilton, a spokesman for the Federal Highway Administration's Office of Motor Carrier Safety, says that more than one million CDLs have already been issued. Some 5.5 million truck drivers eventually will be included in the program, Hamilton explains. As of this spring, Arizona, California, Georgia, Illinois, Maryland, Michigan, Minnesota, New Hampshire, Oregon, Utah, Virginia and Washington had put the CDL program into force. By the end of 1990, the CDL program is scheduled to be implemented in 35 states, and 16 more plan to join up by the end of 1991.

The CDL program is expected to get some dangerous truck drivers off the road and to keep others from getting into the cab. But, by themselves, CDLs won't ensure that drivers are safe.

For one thing, the CDL law does not require any training for truck drivers, says Barry Sweedler, director of the Bureau of Safety Programs at the National Transportation Safety Board. "Just because they pass the test doesn't mean they know everything they have to know to drive a truck. They can't ask you about every conceivable situation on a test."

Highway safety also may depend on a court ruling on regulations for drug- and alcohol-testing, Sweedler says. A California appeals court has issued a preliminary injunction against the U.S. Department of Transportation's mandatory post-accident and random drug testing policy for truck drivers. Provisions calling for pre-employment and for-cause drug testing were upheld.

Tomorrow's truck drivers will be less experienced.

Many Drivers on Drugs

"We found (in a study) a third of drivers who died in accidents in eight states were positive for drugs or alcohol," notes Sweedler. "About 10 percent of drivers had serious health problems—mostly cardiac problems—that should have disqualified them from driving."

"Because of drug and alcohol test-

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A vehicle 65 feet long and weighing 80,000 pounds demands "a certain attitude and patience" as well as skill to drive safely.

ing and the hope for tightening up medical requirements, I think you are going to see a need for many new drivers, and the industry tells us it is not going to be so easy to find these drivers from the traditional areas. I think that, based on what I hear from industry sources, it sounds like they are going to turn to non-traditional sources, such as immigrants newly arrived to this country and more women."

To help train those new drivers, there are numerous truck-driving schools around the country. But if past patterns hold, many of the new drivers won't get any training, Campbell maintains.

"Most of the drivers on the road today had, if they had any training at all, training done by a company that they worked for. I don't have any firm figures, but a recent study in Michigan would suggest that fewer than 15 percent had any training at all. Schools were only a small fraction of that 15 percent. To count as training (for the purposes of the study), it had to be some kind of training involving classroom and on-the-road instruction. What might have been the more common situation is where someone just fetched out the vehicle and went around the block a few times until he had the hang of it."

One reason that more would-be drivers have not attended schools in the past is that such training didn't guarantee jobs, Campbell believes.

"The first problem was that there was no way to assess the merit of the programs that were offered. Suppose you decide to become a truck driver. There is no way to know how good the curriculum is at a particular school. Anything would have been available, including a mail order course you could complete in your own living room."

'Not that many people want to drive trucks.'

As a result, diplomas from such schools tended not to impress people in charge of hiring new truck drivers, explains Campbell.

Certification Trend

However, there appears to be a trend toward certifying truck-driving schools and formal training of new drivers.

"New drivers are much more likely to have training," says Campbell. "I think companies tend to look for that more now in hiring."

But making training available for new truck drivers isn't all that simple, says James McAlpin, executive director of the Commission of Accredited Truck Driving Schools, which represents 19 schools.

"Part of the problem has to do with the financial aid," McAlpin explains. "The student loan situation is in upheaval right now. 'Upheaval' is one of the nicer things you could say."

A new law that went into effect Jan. 1, aimed at lowering high default rates on student loans, has cut enrollments at truck driving schools by as much as 40 percent, says McAlpin.

"The problem for the driving schools is there seems to be an intent in Congress to have federal student loans only for individuals who have high school diplomas or general equivalency degrees. That eliminates an individual who for various reasons never completed high school."

Now, driving schools are graduating 40,000 to 45,000 truck drivers a year, but it's not enough, McAlpin concludes. Officials of schools and trucking companies are considering new marketing plans to bring more people into the field. STOP

An example of the menace of an everyday substance, the gasoline in this van apparently leaked from the gas tank to be ignited by the hot exhaust system below.

Alternate Fuels Spark New Concerns

As alternate fuels take off, hazards take new twists

BY MICHAEL P. MALONE

COMBINING politics, science, consumer demands and oil industry research can produce a highly combustible mixture. The explosion of debate concerning alternative fuels, sparked by the introduction of the Clean Air Act, has focused on environmental and health issues that raise questions about the continued use of gasoline to fuel America's automobiles.

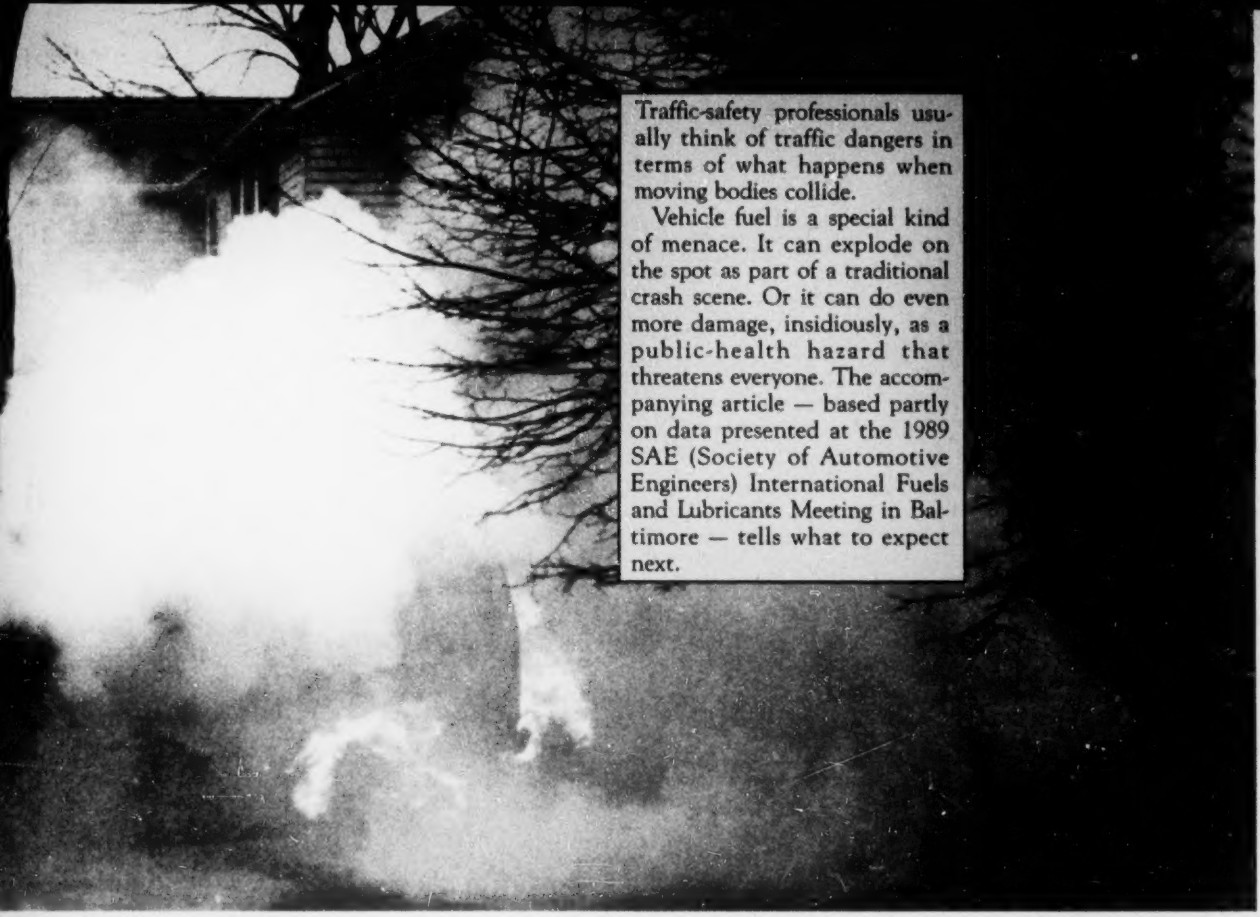
The current standards for auto emissions were enacted by Congress in 1977, but each year since then Americans have bought more cars and driven them more miles. One critical factor in emissions control — vehicle miles driven — shows no sign of decreasing. It is largely on account of this growth that Congress has looked at another way to attack the problem — creating cleaner-burning fuels. In the words of President Bush, the search for alternative fuels is part of a campaign to "reconcile the automobile to the environment."

The political momentum is a reflection of the growing environmental concern of the American people. The first Earth Day in 1970 was designed to promote a campaign of public awareness of environmental issues. On Earth Day, 1990, a new Gallup poll showed that 76 percent of American adults consider themselves "environmentalists." Ecological issues are no longer a concern of a small cadre of activists, says the poll. "Today, environmentalists comprise a broad-based coalition from diverse social and economic backgrounds," notes a recent article in the *Gallup Report*.

The Party's Over

If the message is being transmitted from the "bottom up," it has not only reached the Oval Office and corridors of Congress, it has penetrated the board rooms of the automotive industry. "The party's over," says Robert A. Lutz, president of Chrysler Motors Corporation. "We are making a mess of our environment and the sooner we clean it up the better."

Since there is basic agreement on almost all sides that cleaner air is an



Traffic-safety professionals usually think of traffic dangers in terms of what happens when moving bodies collide.

Vehicle fuel is a special kind of menace. It can explode on the spot as part of a traditional crash scene. Or it can do even more damage, insidiously, as a public-health hazard that threatens everyone. The accompanying article — based partly on data presented at the 1989 SAE (Society of Automotive Engineers) International Fuels and Lubricants Meeting in Baltimore — tells what to expect next.

> **Refueling with CNG is more dangerous than pumping gas.**

important national goal and that the gasoline-powered car is the single largest source of pollutants, one might expect a clear course of action to solve the problem to emerge. Unfortunately, although an agreement may be reached on the scope and source of the problem, it disappears as soon as remedies are discussed.

The proposed revisions of the *Clean Air Act* of 1970, as originally introduced in June 1989, specifically called for the introduction of vehicles powered by "alternative fuels" into America's most polluted cities by 1997. Under the large umbrella of "alternative fuels" one finds such relatively common combinations as gasoline and methanol, as well as some futuristic fuels like solar-hydrogen, which depend on a yet-to-be-developed technology. The search for alternative fuels involves an analysis of their costs, their safety and health risks, and the likelihood of consumer acceptance.

Focus on Methanol

Perhaps the most widely discussed alternative fuel is methanol, an alcohol fuel made from coal, wood, natural gas or garbage. With regard to infrastructure and automotive design and production costs, a mixture of 85 percent methane and 15 percent gasoline could be the least expensive of the alternate fuels.

A study presented by Margaret K. Singh at the 1989 SAE International Fuels and Lubricants meeting compared the infrastructure requirements of various alternative fuels. She found methanol to be the least expensive. Methanol would have the least impact on the current delivery system, with most of the additional costs due to the necessity of having larger storage facilities. A car would require almost twice as much methanol as gasoline to go the same distance. She estimated that currently produced automobiles could become "flexible fuel vehicles" (FFVs) and run on a methane-gas mixture (M85) at an increased cost of only $210 to $340 per mass-produced FFV.

Safety Concerns

Some serious safety concerns over the use of methanol have been raised. In its pure form, it burns without a visible flame, creating a hazard for drivers and emergency personnel. Mixing methanol with gasoline eliminates this risk, but also reduces its environmental benefits — hydrocarbon emissions, for example, are 90 percent less than gasoline when straight methanol is used, but only 35 percent less with M85, notes *Consumer Reports.*

Methanol is also highly toxic. Ingesting it can cause blindness, brain damage and death. Car makers would have to install devices in tanks to prevent the siphoning of fuel. As an alcohol, methanol is water-soluble, creating a danger to the water supply from spills and storage tank leaks.

Because nearly twice as much methanol fuel would be required to travel a given distance as with a car powered by gasoline, consumers would have to refuel twice as often, or car makers would have to double the size of their fuel tanks, compromising any design and size adjustments that could be made to increase mileage. In addition, methanol is highly corrosive. The tanks would have to be stainless steel. The tubing and engine parts that come in contact with the fuel would have to be treated to withstand corrosion.

Finally, while methanol would reduce hydrocarbon emissions and total airborne toxins, burning methanol produces four to eight times more formaldehyde than gasoline, says *Consumer Reports*. The same smelly stuff used to store frogs for biology experiments also adds to the creation of ozone in the lower atmosphere, irritates eyes and lungs, and is suspected of being carcinogenic.

The environmental tradeoffs don't stop there — if methanol is produced from natural gas, it would help decrease carbon dioxide levels 10 percent, but if it is produced from coal it would increase these levels 100 percent.

Compressed Natural Gas

Compressed natural gas (CNG) is an attractive alternative because of abundant U.S. and world supplies. It could reduce hydrocarbon and carbon monoxide emissions by at least half, while reducing carbon dioxide emissions by 10 percent. Carbon monoxide and airborne toxins are almost totally eliminated.

The CNG vehicle sounds like a winner in the "fuel-of-the-future" derby until someone wants to drive more than 100 miles without refueling. A passenger car would have to be loaded like a pack-mule with extra tanks to get anywhere near the miles-per-fill-up today's driver expects.

According to technical papers presented at the SAE fuels and lubricants meeting, the costs for adding on CNG tanks and filling stations to existing gas stations would also be high, due to the required size of the storage tanks, the delivery by pipeline to stations and a special compressor needed to speed up refueling. For these reasons, CNG is being considered primarily for fleet use, where its cost compared to gasoline will be able to offset the infrastructure expenses.

Government subsidies or tax credits for CNG fleets might also speed its acceptance. There are currently 30,000 CNG fleet vehicles operating in the U.S., including buses specifically designed for natural gas fuel which are being tested this year in Ohio and California.

CNG in Canada

Canada is currently experimenting with privately owned and driven vehicles that can use CNG as an alternative fuel. According to an SAE technical paper prepared by David L. Greene, the Canadian test shows that consumers' acceptance of natural gas depends on fuel cost, performance, range limitations, refueling convenience and maintenance costs. His conclusions regarding refueling would pertain to any alternative fuel. "An adequate refueling network appears to be a precondition for market acceptance of alternative fuel vehicles and essential if flexible fuel vehicles are to use the new fuel a significant fraction of the time," states Greene.

Safety issues might arise with CNG vehicles from two factors: doubling the size of the tanks could expose them to more stress in a crash and delivering the CNG under pressure during fueling may be more dangerous than the current pumping of gasoline.

The electric-powered car has been a novelty at auto shows for more than a decade. The breakthrough in technology that would put an electric car in every garage has always seemed to be just around the corner. Unfortunately, it is still around the corner. The most optimistic estimates put the mass produced electric car 10 to 15 years away from full production, and this assumes major technological advances. The basic problem is inherent in the source of power — a very large battery. The battery could weigh 1,000 pounds, require eight to 10 hours to charge, and then have a potential range of only 100 miles.

The least expensive alternative fuel burns without a visible flame.

If that weren't enough to frighten most car buyers, the SAE report on alternative fuels estimates that a mass-produced electric car might cost as much as $6,200 more than a gasoline-powered automobile. While the cost over the life of the cars might even out (it is expected that electric cars will last longer and require less maintenance) the sticker shock alone may doom this alternative to the realm of science fiction.

Expensive, But Safe

Yet, the electric car may be the safest of all alternatives. The car itself would emit no exhaust at all and would also reduce noise pollution because of its quiet power plant. The attention of environmentalists could then be focused on the power plants producing the electricity, and emissions could be controlled at the source. Absence of flammable fuel would reduce injuries and deaths in traffic accidents. It is likely that even the most advanced electric automobiles could not reach the dangerously high speeds gas-powered cars are capable of.

The most speculative of the alternative fuels might also be the long-range solution to concerns about health, the environment and a renewable source of energy. In theory, solar-hydrogen power works this way: huge banks of solar cells in the deserts of the Southwest collect energy from the sun during the day, creating electricity; the electricity is used to separate the hydrogen atom from plain water; the hydrogen is delivered to population centers via pipeline and used to fuel cars. When hydrogen burns, the main emission is harmless water vapor.

The most significant obstacle between solar-hydrogen theory and reality is money. It takes more energy to break up water molecules and capture the hydrogen than the burning of hydrogen produces, so the production of hydrogen has not been an attractive commercial venture. But solar energy has become much cheaper during the last decade and further reductions in cost could make hydrogen fuel a competitive alternative.

Converting solar energy to hydrogen fuel also means the entire country could take advantage of sunlight as an energy source. "If you don't go to hydrogen," says Princeton University physicist Robert H. Williams, coauthor of a study on the use of hydrogen fuel, "then you're restricting photovoltaic energy to sunny areas."

James Gustave Speth, president of the World Resources Institute, is also a backer of hydrogen as an alternative fuel, stating, "None of the other alternative fuels we are considering in the Clean Air Act even comes close to hydrogen."

But the same drawbacks that make natural gas unattractive to the consumer may doom hydrogen, which has only one-sixth the energy of gasoline. Cars would require huge tanks,

A relieved firefighter confirms that all the occupants of the burned-out van scrambled out in time to escape injury.

and even then might not have a range exceeding 100 miles.

It may be that the most likely "alternative" fuel will be gasoline itself, albeit with a new, cleaner formula. Through additional refining, the heavier and lighter compounds produced as part of the current gasoline blend would be removed. These compounds are responsible for much of the current automobile emissions pollution.

Shortly after the introduction of the original *Clean Air Act* proposal calling for alternative fuel cars, Sun Oil Company and Atlantic Richfield Company (ARCO) announced plans to introduce reformulated, cleaner gasoline. The Big Three auto makers soon joined with the oil industry to announce that they would be prepared to manufacture cars capable of burning reformulated gasoline or a methanol mixture by the mid-1990s.

Both the oil companies and auto makers argued for the removal of the requirement mandating the production of alternative fuel. It was soon deleted from the proposed legislation.

Gasohol Subsidized

"Reformulations" may include methanol or ethanol mixes in addition to "better scrubbed" gasoline. The American consumer enjoyed a brief flirtation with ethanol in the 1970s as a result of the oil crisis, but the mixture never caught on because of the increased costs it adds to a gallon of fuel. Today, ethanol is produced only because of government price supports in the form of reduced motor vehicle fuel taxes on gasohol, the ethanol-gasoline blend. According to the National Corn Growers Association, 360 million bushels of corn — about five percent of the nation's crop — was used to make ethanol in 1989. Corn used for ethanol production could top one billion bushels by the turn of the century, according to the growers.

The public needs encouragement to accept less convenient fuels.

In the end, government fiat may be less important to the success of various alternative fuels than consumer demand. "I think consumers are willing to make certain tradeoffs, but it depends on the individual consumer," says Jacqueline A. Ottman, an environmental consultant, in a recent article in *American Demographics.* "The issue is that consumers genuinely want to be environmentalists, but people have thresholds of price and convenience that they will not be able to overcome. What they need are products that help them be environmentally responsible, but help them maintain the lifestyles they are already leading."

It is in the area of consumer acceptance that the reformulated gasolines score the most points versus the other alternatives. Consumers may be willing to pay more for "clean" gas, but they will likely want to fill up at the corner station and get just about as far on a tank of gas as before.

The *Clean Air Act* will focus attention on emissions, and will likely leave it up to auto makers and the oil industry to devise a way to meet those standards by the dates set in the bill. Their response will have an impact on the design of new automobiles and the fuels that power them.

These changes in manufacture and design will undoubtedly pose new challenges for traffic safety professionals. Some vehicles will explode and burn in new ways. Also, as part of the larger health and safety scene, there'll be an obligation for traffic safety educators to encourage public acceptance of less polluting fuels.

[illegible] adjustable keyboards and monitors can [illegible] operator's height and reach, which helps [illegible] puts materials within easy reach. It also [illegible] out maps and other materials necessary for [illegible]

Accident Records a Lot To Husk

More efficient office helps Nebraska save lives

NEW FURNITURE in the Nebraska Department of Roads Highway Safety Division office is making record-keeping workers more accurate and productive. Without leaving their desks, they join patrolling troopers in helping move traffic safely.

Logging data for all accidents that occur on 100,000 miles of roads, streets and highways across the Cornhusker State keeps eight people busy 52 weeks a year.

Eight hours a day, data entry operators sit at their computer terminals entering 120 pieces of required information for each reported accident. Annually, some 138,000 accidents are logged.

"It is a tough job that never goes away," explained Kenneth L. Sieckmeyer, highway safety division manager, Nebraska Department of Roads.

"The work is tedious and requires a lot of attention to detail," he added. "When you're punching a keyboard and staring at a monitor all day, fatigue is a major concern."

Reducing Stress

To help reduce stress and make operators more comfortable, the division explored ways to improve the overall work environment. The goal was to keep operators alert and their data entry accurate.

"We evaluated various types of office furniture that would help reduce glare, noise and back problems," said Sieckmeyer. This led him to Hamilton Sorter Company, Inc., Fairfield, Ohio, manufacturer of Biotec® workstations.

These workstations incorporate a number of features which make computer terminal operation more comfortable. This includes fully adjustable keyboards and monitors that can be raised, lowered or tilted to fit individual requirements.

States that skimp up front pay for it in the end.

An integral part of the installation, fabric-covered acoustical panels 56 inches high, are placed between workstations. They provide privacy, eliminate distractions and reduce noise levels.

Boosting Morale

"In addition to reducing noise, the panels improved the appearance of the office and boosted morale," Sieckmeyer noted. "Each operator now has his/her own work area and a greater feeling of professionalism, which is vitally important in this department. Lives are dependent on the accuracy of our work.

"Prior to installation of the new workstations, pairs of operators shared a standard 30 x 60-inch work table and each used a CRT on an old-fashioned terminal table purchased in the 1960s. There were no barriers to noise and distraction as we have now," the manager said.

Information contained in the accident reports has a direct bearing on the design of highways, location of signage, traffic control and the elimination of hazards.

Sieckmeyer noted that many state agencies tend to economize up front, not realizing that in the end such actions may end up costing them through reduced efficiency.

Spend to Save

"You have to spend money to save money. Too many managers do not take time to analyze the work environment—the wall colors, paintings, the individual work areas and the ability of workers to display personal items, such as family photos. All these factors impact on production, job satisfaction and overall morale," he pointed out.

Sieckmeyer reported a significant improvement in the accuracy of data entry as a result of the new furniture and other office improvements. "We used to have four people checking data that had been entered. Now we need only two and they have time to carry out other duties."

The Highway Safety Division works closely with the enforcement and education departments in Nebraska to improve highway safety.

"We develop the data that indicates where hazards to motorists exist. This information, in turn, may be used by other disciplines. Enforcement may choose to deploy more patrol officers to enforce speed limits. Education may launch a program to alert and inform drivers. Signage may be installed, or ultimately a stretch of roadway may be rebuilt," Sieckmeyer said.

Result: Fewer Deaths

Thus, the division's accident reporting program has had an effect on reducing the number of highway accidents and fatalities occurring throughout the state. "This is the bottom line," said Sieckmeyer. "We are very pleased and proud of the role this division has played.

Lives depend on the accuracy of records work.

"We feel it is proof that a work environment that is professional, personal, attractive and productive can make this kind of contribution to highway safety," said Sieckmeyer, who promised his superiors a number of productivity improvements to obtain approval for the new furniture and other office improvements.

"Our offer to the director was greater efficiency, accuracy, worker satisfaction, reduced sick leave, absences and employee turnover, plus that one position could be eliminated through attrition. We have achieved those goals," he concluded.

Acoustical panels separating all work stations help reduce distractions and improve productivity. Workers feel more professional.

WASHINGTON WORLD

Federal Agencies Unveil Highway Agenda for the 1990s

Officials take a tough stance on safety

BY JIM CASTELLI

In the wake of the National Transportation Policy announced earlier this year by President Bush and Transportation Secretary Samuel Skinner, the National Highway Traffic Safety Administration and the Federal Highway Administration have each issued a detailed agenda on traffic safety.

According to NHTSA administrator Jerry Curry, the policy makes safety its top priority, with the aim of cutting the death rate and traffic death toll over the next decade.

"The American people are demanding higher levels of safety in the cars and trucks they drive," explains Curry. "We have developed a balanced program of proposed regulatory and driver-related improvements aimed at saving lives and preventing injuries."

National Transportation Policy safety goals include increasing safety belt use to 70 percent by 1992; decreasing the number and percentage of alcohol- and drug-related highway crashes and fatalities and decreasing the fatality rate on U.S. roads to 2.2 deaths per 100 million miles of travel.

"The good news is that the president's fatality rate goal has been met because more Americans have gotten the message about drunk driving," says Curry. "They are taking advantage of available safety devices, such as safety belts, air bags and child safety seats for youngsters. But far too many still ride unprotected, think warnings about drunk driving are meant for 'the other guy' and routinely ignore posted speed limits."

The National Transportation Policy includes these safety goals:

- Encourage all states to enact laws requiring use of safety belts and motorcycle helmets, and to strengthen laws against drunk and drugged driving;
- Conduct a coordinated national campaign to increase public awareness of traffic safety issues, promote improved driver training, achieve more effective driver licensing and driver records, build support for driver safety laws and change unsafe driving behavior;
- Target federal financial support and technical assistance to promoting more effective enforcement of laws and regulations governing speed limits, motor carrier safety, drunk and drugged driving, and use of safety belts, child safety seats and motorcycle helmets;
- Develop rules to require vehicle design improvements to increase occupant protection and improve vehicle crash avoidance capabilities and continue efforts to keep unsafe vehicles off the roads, through close monitoring and recalls of defective vehicles.

NHTSA Plans

According to Curry, NHTSA plans include:

- Considering new federal regulations to protect passengers in side impact crashes;
- Ensuring that light trucks, vans and utility vehicles have the same safety requirements as passenger cars;
- Improving the safety of child passengers;
- Providing improved occupant protection in roll-over crashes.

Specific NHTSA goals for the rest of 1990 will attempt to:

- Complete rule-making on passenger car side impact; automatic crash protection, static side impact and high mounted stop lights for light trucks; potential crash avoidance standards; newborn dummy child safety seats; child seat registration; mirrors, window retention, body joint strength, flammability and stop arms in school buses; and light truck fuel economy standards for 1992-4 models.
- Increase the number of states with prompt license suspension provisions from the present 34 to 37.
- Increase the number of states with drug evaluation classification from 23 to 30.
- Prepare guidelines for effective state programs on impaired driving.
- Work with the Network of Employers for Traffic Safety to implement drunk driving programs and increase safety belt use at 200 corporations.
- Promote the development and adoption of acceptable safety belt use survey methods by states.
- Increase the number of states with motorcycle helmet laws from the present 22 to 24.

FHWA Safety Goals

FHWA administrator Tom Larson says: "We will continue to emphasize highway safety through the correction of hazardous locations, rail-highway crossings, improved highway design, better construction, zone traffic control and increased enforcement of motor carrier driver and vehicle safety standards."

By reducing rail-highway crossings and roadside hazards, "we estimate that more than 24,000 fatalities and 525,000 injuries have been prevented since 1974, but more can be done," says Larson.

The FHWA is also accelerating the development of Intelligent Vehicle-Highway Systems which provide current road and traffic information to drivers.

FHWA and NHTSA are working closely with state and local governments on special programs in pedestrian safety; traffic law compliance; comprehensive highway corridor safety improvements; speed, drug and alcohol enforcement and safety construction.

"Motor carrier safety and the regulation of hazardous materials transportation are receiving increased attention," adds Larson. "Our motor carrier safety goals include: full implementation of the commercial drivers license program nationwide; elimination of alcohol and drug use by drivers and increased roadside inspections and motor carrier reviews."

Driver Registry Updated

Secretary of Transportation Samuel Skinner has announced that an improved National Driver Registry to help states keep track of problem drivers is now operational. NHTSA has published proposed regulations spelling out how states may participate in the program (Federal Register, April 4, 1990).

The registry has existed for more than 25 years, but it has been updated with a new computerized Problem Driver Pointer System (PDPS), which will allow officials in one state to quickly find out whether another state has taken adverse action against a driver's license applicant.

Under the system, when a person applies for a driver's license, Department of Motor Vehicle personnel contact the National Driver Registry to see if there is a "pointer" indicating that the applicant has had a problem in another state. If the employee finds a pointer, he or she can get a summary of the applicant's record from the reporting state immediately through the computer system.

A pilot study conducted in North Dakota, Ohio, Virginia and Washington in 1988 found that, in three months, the states made 545,000 inquiries resulting in more than 25,000 license denials. More than 80 percent of denials were made while the applicant was "at the counter."

Participating states are required to provide the NDR with information about anyone:

- Who was denied a license by the reporting state for cause.
- Whose license has been canceled, revoked or suspended.
- Who has been convicted of driving under the influence or impaired by alcohol or drugs; a violation connected with a fatal accident, reckless driving or racing on the highways; failure to aid or provide identification when involved in an accident which produces a fatality or personal injury; or perjury or knowingly making a false statement in connection with motor vehicle laws.

NHTSA officials believe the PDPS system is efficient because information on problem drivers is maintained by the states and is more up-to-date than it would be if the federal government had to maintain all the records.

The National Transportation Safety Board and Federal Highway Administration will be able to use the NDR in connection with accident investigations. The Federal Aviation Administration, Federal Railroad Administration and prospective employers of commercial drivers will be able to use the registry if a job applicant initiates the request for information.

Small Car Debate Continues

Sen. Richard Bryan (D-Nev.) has introduced and temporarily withdrawn a bill which would require significantly higher fuel economy standards for American vehicles. But critics charge that the end result would be wider use of smaller — and more dangerous — cars.

Bryan's bill calls for new cars sold in the U.S. to get an average of 33 miles per gallon in 1995 and 40 mpg in 2001. The government now requires automakers to achieve an average of 27.5 miles per gallon for all cars they sell every year, a requirement known as the corporate average fuel economy (CAFE) standards.

Bryan initially offered his bill as an amendment to clean-air legislation now before Congress. But he withdrew the measure temporarily this month, one day after it came under attack from a coalition of auto companies and citizens' groups, including Robert L. Turner, vice president of the National Sheriffs Association.

John D. Graham, a professor at the Harvard School of Public Health, and Robert W. Crandall of the Brookings Institution, wrote in a 1989 report, "The Effect of Fuel Economy on Automobile Safety," that the average new car sold in the United States in 1989 weighed 1,000 pounds less than in 1978. They said lighter cars would result in more accidental deaths and predicted that lighter 1989 models alone will account for 3,900 additional traffic fatalities over the next 10 years.

A report by the Insurance Institute for Highway Safety says "the death rate in the smallest cars on the road is more than double the rate in the largest cars."

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Transportation Safety Turns Aggressive

VISION '90s is the theme of the 1990 National Safety Council Congress and Exposition, to be held Oct. 28-Nov. 1 in Las Vegas.

"Moving America: New Directions, New Opportunities" is the title of the National Transportation Policy recently announced by U.S. Department of Transportation Secretary Sam Skinner. Safety has taken a very high priority within this new transportation policy and will be highlighted throughout this year's Congress. More than 20 educational sessions will focus on a wide variety of important topics, including:

Highway Traffic Safety

A Blockbuster Session on the new "National Transportation Policy — Strategies for Action" is co-sponsored by the Council's Transport, Railroad, Marine and Public Employee Sections. "NETS: Network of Employers for Traffic Safety" will focus on protecting the employee who drives on the job.

A Specialty Session entitled "Tort Liability and Risk Management" will focus on governmental agencies responsible for providing transportation services and the liability of those agencies. The unique safety needs of "Pedestrians and Older Drivers" will be the subject of another specialty session, as will OSHA's "Proposed Requirements for Occupant Restraint Usage and Driver Training."

"Drugs in the Workplace: Occupational Hazard? — Lessons from Transportation Safety" will focus on a major issue in transportation which is applicable to all industries concerned with employee drug use.

"Innovations in Traffic Records Technology" will look at state-of-the-art technology available to meet new demands for data on motor vehicle crashes, both on- and off-the-job.

"Work Zone Safety" will report on a growing problem within the highway construction industry. The latest advances in work zone technology will be discussed at this session.

VISION '90s

Driver Improvement

The Driver Improvement Department will sponsor "The Defense Driving Course — Attitudinal Dynamics of Driving (DDC-ADD)." The course is designed for problem drivers, drivers who have received numerous tickets and drivers who have had multiple collisions.

"DDC Prepares You for CDL" will highlight the requirements of the Commercial Motor Vehicle Safety Act and explain how DDC can help drivers meet its requirements.

"DDC. . .It's More Than You Think" will provide an overview and synopsis of each Driver Improvement Course along with a review of the appropriate audiovisuals. The new FLI Municipal Services program that deals with the needs of law enforcement, emergency medical and highway maintenance vehicle operators will also be introduced.

Motor Transportation

The Motor Transportation Division's Blockbuster, co-sponsored by the Commercial Vehicle, Fleet Administrator, School Transportation, and Transit Sections, entitled "Implementation of CDL," will provide delegates the latest information on challenges encountered from various state representatives involved in early implementation of the Commercial Driver's License.

OSHA is placing a high priority on basic fleet safety in industry since motor vehicle accidents are a leading cause of occupational fatalities and injuries. "Basic Fleet Administration Safety Program," a Blockbuster session sponsored by the Commercial Vehicle Section, will cover OSHA's posture on fleet safety and outline the basic elements of a fleet administrator's safety program.

Commercial Vehicles

"Media Relations in Crisis Situations" will be a valuable presentation on developing a program and policy for disseminating accident-related information to the media, and the legal ramifications of such material.

"Drug Testing — Regulations & Training" is a review of the latest government information on drug testing requirements. Attendees will receive training on drug abuse policy development and training. A Certificate of Completion will be provided to each attendee following the presentation.

School Transportation

"Liability for Failing to Adequately Train School Bus Drivers" will discuss the key elements of a thorough training program, such as retaining the proper documentation for future reference.

"Special Education Driver Training" discusses caring for special ex-

VISION '90s

National Safety Council Congress and Exposition
October 28-November 1, 1990
Las Vegas, Nevada

1990 REGISTRATION AND HOUSING FORM

Please photocopy forms and keep these instructions for your records.

REGISTRATION INFORMATION AND INSTRUCTIONS

Registration for the 1990 National Safety Council Congress & Exposition is simple. The following explains the Congress format. Once you have read this material, fill in the Registration section of the following form and return it along with the applicable fees to the National Safety Council Registration and Housing Office. Telephone registrations will not be accepted.

Types of Registration

Full Congress & Exposition entitles you to attend Congress sessions Sunday through Thursday, and the Exposition Monday through Wednesday.

One-Day Congress & Exposition entitles you to attend Congress sessions and the Exposition on either Monday, Tuesday or Wednesday. *You must indicate the applicable code for the day you plan to attend.*

Distributor. If you are a distributor of safety/health products or services, you can register as a distributor and attend the Exposition Monday through Wednesday. *Be sure to staple your business card to the registration form.*

One-Day Exposition entitles anyone to attend the Exposition on either Monday, Tuesday or Wednesday. *You must indicate the applicable code for the day you plan to attend*

Student entitles any full time student to attend the Congress sessions Sunday through Thursday, and the Exposition Monday through Wednesday. *A copy of your student I.D. must be enclosed with your registration form.*

Spouses. If your spouse accompanies you and he/she is not a safety professional, a complimentary registration is available. Be sure to list his/her full name in the boxes at the top of the registration form.

Professional Development Seminars. Seventeen Professional Development Seminars (PDS) are offered this year. These seminars are held on Thursday or Friday and run from 9:00 a.m. until 4:00 p.m. **There is a separate charge for each seminar.** Upon completion, each participant will receive applicable CEU credits.

Early Registration Discount Fees

Attendees who register by September 28 are able to take advantage of the Early Registration Discount and save $10 to $80 on the regular fee. Following is a list of Early and Regular registration fees.

Registration		Early	Regular
Full Congress & Exposition	Member	$180	$230
	Nonmember	$240	$320
	Government	$180	$230
One-Day Congress & Exposition	Member	$110	$140
	Nonmember	$140	$170
Distributor		$ 50	$ 70
One-Day Exposition		$ 40	$ 50
Student		$ 40	$ 50
Professional Development Seminars	One-Day:		
	Member	$140	$190
	Nonmember	$190	$240
	Two-Day:		
	Member	$280	$360
	Nonmember	$360	$480

Fees Required with Registration

All registration fees must be received with the registration form. Do not FAX. Please make checks or money orders payable to National Safety Council/ITS.

Demographic Information

It is important that the demographic section of the registration form be completed by each participant. This information is gathered to help design a better Congress for all participants.

Attendance Policy

Young people under the age of 12 are not permitted to attend the Exposition, sessions, committee meetings or similar Congress activities. This restriction also applies to the setup and teardown days of the Exposition. Only one family member, spouse or child, may register free of charge for each fully-registered attendee. Therefore, any additional qualified family members must pay the applicable registration fee.

Individuals under the age of 12 are welcome to participate in the open social activities such as the tour program and Congress Night Out if accompanied by a parent or adult. Proof of age may be required. The National Safety Council reserves the right to deny admittance to any individual thought to be under the required age.

The Council imposes these restrictions in deference to speakers and attendees who seek to exchange the latest in safety and health information and products. The Congress and Exposition provides a business purpose and is not generally considered an area appropriate for children.

Video Taping and Audio Recording Policy

Video Taping

Due to the intricate and often sensitive technical material, and additionally, as a courtesy to the speakers and audience, video taping is expressly prohibited in any Congress education session, committee meeting or other function. This restriction also applies to the Exposition.

Audio Taping

Audio taping by personal hand-held recorders not tied into the sound system of the meeting room is only permitted when in compliance with the following restrictions:

The request must be submitted in writing to the Convention Department prior to the start of Congress. If approved by all parties concerned, written approval will be issued. Such approval must be brought to the session, meeting or exhibit hall and submitted to the Council staff representative present.

The recorded material is limited to personal use and may not be distributed to anyone else or further duplicated in any fashion.

Failure to comply with these policies automatically cancels the registration and right to participate. In such case, refunds will not be issued.

No Smoking Policy

Areas adjacent to the Exposition floor will be designated for smoking. Otherwise, it is Council policy that smoking is prohibited at all Congress activities (includes Exposition, Sessions, Committees).

Badge Returned by Mail

A confirmation will be sent to each participant. If you register by September 28, your Congress identification badge will be mailed to you at the address listed on the registration form. Registrations received after September 28, require that the attendee pick up his/her badge on-site at the Late Advance Registration Area.

Cancellation Policy

Cancellation requests must be sent in writing to the Registration and Housing Bureau of the National Safety Council. A $25.00 processing fee will be incurred on cancellations received by September 28. No refund will be issued on cancellations received after September 28. *Telephone cancellations will not be accepted.* Refunds will not be issued until after Congress regardless of when they were requested.

On-Site Registration

On-Site registration will be available as follows:

Las Vegas Convention Center		
Saturday	October 27	8:00 am-4:30 pm
Sunday	October 28	8:00 am-4:30 pm
Monday	October 29	7:00 am-4:30 pm
Tuesday	October 30	7:00 am-4:30 pm
Wednesday	October 31	7:00 am-2:00 pm

See reverse side for Hotel Reservation Information

VISION '90s

National Safety Council Congress and Exposition
October 28-November 1, 1990
Las Vegas, Nevada

1990 Registration and Housing Form

I. TYPE OR PRINT VERY CAREFULLY

Name ____________ First ____________ Last

Title ____________

Organization ____________

Address ____________

City ____________ State ____ Zip ____

Province ____________ Country ____________ Postal Code ____

Phone ____ ____ ____ FAX ____ ____ ____

Check One: ☐ National Safety Council Member Customer Number ____ ____ ____ ☐ Non member

Spouse Name ____________ First ____________ Last

Complimentary if attending and not a safety professional

II. ATTENDEE INFORMATION: MUST BE COMPLETED FOR PROPER REGISTRATION

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- ☐ 1 Less than $10,000
- ☐ 2 $10,000-24,999
- ☐ 3 $25,000-99-9999
- ☐ 4 More than $100,000

NUMBER OF EMPLOYEES

- ☐ R 0-249
- ☐ S 250-499
- ☐ T 500-999
- ☐ U 1,000-4,999
- ☐ V 5,000 or more

IS THIS YOUR FIRST CONGRESS?

- ☐ 72 Yes
- ☐ 73 No

STANDARD INDUSTRIAL CLASSIFICATION (Primary)

- ☐ 07 Agriculture
- ☐ 45 Air Transportation
- ☐ 79 Amusement & Recreation
- ☐ 23 Apparel
- ☐ 28 Chemicals
- ☐ 48 Communications
- ☐ 15 Construction
- ☐ 92 1 Courts
- ☐ 82 Education
- ☐ 49 Electric/Gas/Sanitary Services
- ☐ 36 Electronic Equipment
- ☐ 20 Food and Kindred Products
- ☐ 08 Forestry
- ☐ 99 4 Government
- ☐ 63 Insurance
- ☐ 86 3 Labor Unions
- ☐ 99 2 Law Enforcement
- ☐ 35 Machinery
- ☐ 39 Manufacturing
- ☐ 80 Medical/Health
- ☐ 86 Membership Organizations
- ☐ 33 Metals
- ☐ 10 Mining
- ☐ 26 Paper
- ☐ 29 Petroleum
- ☐ 27 Printing and Publishing
- ☐ 91 Public Administration
- ☐ 40 Railroads
- ☐ 30 Rubber and Plastics
- ☐ 41 5 School Bus
- ☐ 70 Services
- ☐ 99 1 State DOT
- ☐ 32 Stone/Clay/Glass
- ☐ 22 Textile Mill
- ☐ 52 Trade, Retail
- ☐ 50 Trade, Wholesale
- ☐ 99 3 Traffic Safety
- ☐ 41 Transit Properties
- ☐ 42 Trucking
- ☐ 44 Water Transportation
- ☐ 99 Other ____________ (please specify)

MAJOR JOB FUNCTION (Check one)

- ☐ 18 Buyer/Purchasing Agent
- ☐ 19 Claims/Insurance/Risk Managers
- ☐ 43 Environmental Technical/Hazardous Waste/Industrial Hygienist
- ☐ 44 Fire Protection
- ☐ 45 Fleet Safety
- ☐ 52 Industrial/Labor Relations Manager
- ☐ 53 Law Enforcement Officer/Administrator
- ☐ 55 Loss Control Consultant
- ☐ 56 Maintenance/Operations/Production Manager
- ☐ 57 Medical Service/Occupational Health Director
- ☐ 60 Personnel Services
- ☐ 61 Product Safety
- ☐ 62 Recreation Manager
- ☐ 69 Safety and Health Administrator/Director/Engineer/Officers/Manager/Specialists/Supervisor/Coordinator
- ☐ 71 Safety Trainer/College Instructor/Vocational Educator/Curriculum Specialist
- ☐ 72 State FFA/4-H Leaders
- ☐ 73 Street/Highway Department Supervisors
- ☐ 74 Students

III. REGISTRATION CATEGORIES

Note Early-Bird Discounts

	Advance	After September 28
Full Congress and Exposition		
01 Member (90102)	$180	$230
02 Nonmember (90102)	$240	$320
18 Government Employee (90435)	$180	$230
One-Day Congress and Exposition		
Member (90108)		
03 Monday 05 Tuesday 07 Wednesday	$110	$140
Nonmember (90108)		
04 Monday 06 Tuesday 08 Wednesday	$140	$170
09 Distributor (90114)	$ 50	$ 70
One-Day Exposition Only (90122)		
10 Monday 11 Tuesday 12 Wednesday	$ 40	$ 50
14 Student—I.D. Required (90118)	$ 40	$ 50

FEE PAYMENT

	Code	Amount
III. Registration (See neighboring information)	________	$________
IV. Special Events (Transfer from reverse side)	________	$________
V. Professional Development Seminars (Transfer from reverse side)	________	$________
VI. Hotel Deposit (Government Purchase Orders not accepted)	________	$________
Grand Total	________	$________

RETURN FORM AND FULL PAYMENT OR GOVERNMENT PURCHASE ORDER TO:

Do not send via FAX.

National Safety Council Registration and Housing
c/o ITS 104 Wilmot Road, Suite 300
P.O. Box 825
Deerfield, IL 60015

Money orders or company/personal checks should be made payable to National Safety Council/ITS.

F

ADMISSION BY BADGE ONLY TO ALL CONGRESS SESSIONS & EXPOSITION

IV. SPECIAL EVENTS

Check items for each registrant and transfer codes and fees to reverse side. Tickets will be issued for items indicated.

		Ticket Quantity	
01	Inter-faith Prayer Breakfast (90198)	____________	x $10 each
02	Congress Night Out—To Be Announced	____________	x $____________each

V. PROFESSIONAL DEVELOPMENT SEMINARS

Note Early Bird Discounts

Check all seminars for each registrant and transfer codes and fees to reverse side. Tickets will be issued for admission and must be turned in to obtain continuing education credit. Sign up for 1 seminar per day.

		Advance	**After September 28**
One Day—	Member	$140	$190
	Nonmember	$190	$240
Two Day—	Member	$280	$360
	Nonmember	$360	$480

	ONE-DAY SEMINARS Thursday, November 1, 9:00 a.m.-4:00 p.m.	
	Community Topics	**Amount**
01	Beyond Behavior Modification: What's New in Safety Motivation (90429)	________
02	Liability Loss Control for the Public Employer (90431)	________
	Occupational Topics	
03	Practical Ergonomics in the Workplace (90148)	________
04	Training Concepts for the Safety Trainer—Part I (90154)	________
05	Selling Safety to Management (90166)	________
06	You and Systems Safety (90145)	________
07	Hazardous Waste Management (90401)	________
08	Confined Space Awareness (90423)	________
09	Compliance with the OSHA Lockout/Tagout Standard (90433)	________
	Friday, November 2, 9:00 a.m.-4:00 p.m.	
	Occupational Topics	
10	The Back Injury: Prevention and Control (90158)	________
11	Training Concepts for the Safety Trainer—Part II (90403)	________
12	The Saf-T-Tree (90405)	________
13	Accident Analysis (90152)	________
14	Quality Listening (90425)	________
15	Educating Management in the Principles of Accident Prevention (90427)	________
	TWO-DAY SEMINARS	
	Thursday and Friday, November 1-2, 9:00 a.m.-4:00 p.m.	
16	Hazardous Material Transportation (90417)	________
17	Applied Ergonomics (90421)	________
	Per Person Total	$________

VI. HOTEL RESERVATIONS

Use hotel codes and rates found on the Hotel Reservation Information and Instructions page, and complete all 4 choices:

Dates	Arrival Day and Date	Departure Day and Date	
1st Choice Hotel	2nd Choice	3rd Choice	4th Choice

Hotel Choice
Based On: ☐ Rate ☐ Location ☐ Hotel

Type of Accommodations ☐ Single—1 person, 1 bed ☐ Double—2 persons, 1 bed ☐ Twin—2 persons, 2 beds
☐ Suite, Parlor + 1 bedroom ☐ Suite, Parlor + 2 bedrooms

Room Rate Requested $____________

Rooming with ____

Special Requests—Check all that apply:
☐ No Smoking Room if available
☐ Handicap Accessible Room
☐ Other ____

Room Deposit Required:

1 Room—Single/Double	$100
Suite—Parlor + 1 bedroom	$300
Suite—Parlor + 2 bedrooms	$400

Return this form and payment to:

National Safety Council Registration and Housing
c/o ITS 104 Wilmot Road, Suite 300
P.O. Box 825, Deerfield, IL 60015

Do not send via Fax. **Money orders or company/personal checks should be made payable to National Safety Council/ITS.**

ceptionalities, the growth of the medically fragile population and the liabilities of special education.

Techniques drivers can use to manage student discipline and incentives for encouraging safe behavior on a school bus, as well as disciplinary action if students misbehave, will be discussed in "Innovative Ways of Ridership Management."

Mass Transit

"Mandatory Drug Test Update" is a two-part program covering operator drug testing. The first presentation will contain information from the Urban Mass Transit Administration, while the second portion of the program will present current information from the field.

Recent natural disasters have made it very apparent that every transit property needs to prepare and plan for such events. "Mass Transit's Role in Disaster Planning" will explain how an effective plan can be prepared, based on the experiences of those who have dealt with such events.

"Vandalism/Operator Safety and Security" will discuss methods and procedures used by transit properties to reduce vandalism on transit coaches and bus shelters. Various security methods available to bus operators and the general public will be covered.

"Industrial Hygiene Concerns in Bus and Rail Shops" will describe the role of the industrial hygienist in the ever-changing area of transit safety. Examples of problems and their solutions by several transit properties that are familiar with bus and rail maintenance facilities will be offered.

"Structure/Role of a Safety Committee" will compare several transit properties, focusing on the organization and various personnel involved with their safety committees. The interaction of members, as well as the overall effectiveness of the safety committee, will be discussed by each representative.

"Computer Applications in Transit Safety" will describe various computer systems, programs and packages as they specifically relate to the transit industry. Conclusions on efficiency and effectiveness will be discussed, as well as comparisons of several transit properties.

LIBRARY

Urban Survivors

Accidents

Caldwell, L. H. "Hard Lessons," *Fire Command*, Batterymarch Park, Quincy, MA 02269. Vol. 57, No. 3, March 1990, pp. 20-21.

Forman, R "The Four-Second Solution to Rear-End Collisions," *Commercial Carrier Journal*, Chilton Way, Radnor, PA 19089. Vol. 147, No. 1, January 1990, pp. 60-61.

Tanda, W. K. "Winning a 'Crash Crisis'," *ITE Journal*, 525 School St., N.W., Suite 410, Washington, DC 20024. Vol. 60, No. 2., February 1990, pp. 41-42.

Alcohol

Donovan, D. M., Umlauf, R. L., Salzberg, M., "Bad Drivers: Identifications of a Target Group for Alcohol-Related Prevention and Early Intervention," *Journal of Studies on Alcohol*, Rutgers University, New Brunswick, NJ 08903. Vol. 51, No. 2, March 1990, pp. 136-141.

Mookherjee, H. N. "The Effectiveness of an Alcohol Countermeasure Program in Rural Tennessee," *Journal of Alcohol and Drug Education*, Box 10212, Lansing, MI 48901. Vol. 35, No. 2, Winter 1990, pp. 13-19.

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Schoenborn, E. A., Gattis, R. G., The University of Michigan Transportation Research Institute (UMTRI) *Bibliography, 1984-1989*. Transportation Research Institute, Research Information & Publications Center, 2901 Baxter Rd., Ann Arbor, MI 48109. April 1990, 64 pp.

Bicycles

Ferrara, D., "The Urban Survivor," *Outside*, 3401 W. Division St., Chicago 60651. Vol XV, No. 3, March 1990, pp. 68-69, 72.

Bridges

Tomich, G., "Retrofitting Fracture Critical Bridges," *Construction Specifier*, 601 Madison St., Alexandria, VA 22314. Vol. 43, No. 3, March 1990, pp. 62-67, 71-74.

Driver & Driving

Malfetti, J. L., Winter, D. J., *A Graded License for Special Older Drivers: Premise and Guidelines*, 1990. AAA Foundation for Traffic Safety, 1730 M St., N.W., Ste, 401, Washington, DC 20036. 80 pp.

Malfetti, J. L., Rose, P. R., DeKorp, A., *Manual for the Administration of the Young Driver Attitude Scale*. 1990. AAA Foundations for Traffic Safety, 1730 M St., N.W., Ste. 401, Washington, DC 20036. 24 pp.

Young Driver Attitude Scale. 1990. AAA Foundation For Traffic Safety, 1730 M St., N.W. Ste. 401, Washington, DC 20036. 4 pp.

Enforcement

Haque, M. O., "Evaluation of the Demerit Points System in Deterring Traffic Offenses," *Evaluation Review*, 275 S. Beverly Dr., Beverly Hills, CA 90212. Vol. 14, No. 1, February 1990, pp. 22-41.

Equipment

Cooter, R. D., "Computed Tomography in the Assessment of Protective Helmet Deformation," *Journal of Trauma*, 428 E. Preston St., Baltimore 21202. Vol. 30, No. 1, January 1990, pp. 55-68.

Highways

Humphrey, N., "Access for Large Trucks," *TR News*, 2101 Constitution Ave., N.W., Washington, DC 20418. No. 146, January/February 1990, pp. 6-9.

Inspections

Cross, R., "Annual Inspection: The Final Chapter," *Commercial Carrier Journal*, Chilton Way, Radnor, PA 19089. Vol. 147, No. 2, February 1990, pp. 46-47, 50.

Motor Transportation

Beilock, R., *RCCC Motor Carrier Safety Survey*, 1989. 1990. Regular Common Carrier Conference, 2200 Mill Rd., Alexandria, VA 22314-4677. 54 pp.

Motor Vehicles

"Car Safety: Size Counts," *Consumers' Research*, 517 2nd St., N.E., Washington, DC 20002. Vol. 73, No. 3, March 1990, pp. 27-29.

Pedestrians

Stoke, C. B., Kelly, V. M., *The Pedestrian in the Transportation System: Legislation for Improved Traffic Safety.* January 1990. Virginia Transportation Research Council, Box 3817 University Station, Charlottesville, VA 22903-0817. 38 pp.

Railroads

Isman, W. E., "Know Your DOT Designations," *Fire Command*, Batterymarch Park, Quincy, MA 02269. Vol. 57, No. 1, January 1990, pp. 40-41.

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Rodgers, G. B., "Evaluating Product-Related Hazards at the Consumer Product Safety Commission: The Case of All-Terrain Vehicles," *Evaluation Review*, 275 S. Beverly Dr., Beverly Hills, CA 90212. Vol. 14, No. 1, February 1990, pp. 3-21.

Restraint Systems

Benito, M. C., Farcia, F. F., Quero, L. F., "Lesion of the Internal Carotid Artery Caused by a Car Safety Belt," *Journal of Trauma*, 428 E. Preston St., Baltimore, MD 21202. Vol. 30, No. 1, January 1990, pp. 116-117.

School Buses

Levine, L., "Conference Will Consider Reflective Bus Markings," *School Bus Fleet*, 2512 Artesia Boulevard, Redondo Beach, CA 90278-3296. Vol. 36, No. 1, February/March 1990. pp. 18, 21-23.

Signs & Signals

Bisset, K., "Signaling for Efficiency," *Railway Age*, 345 Hudson St., New York 10014. Vol. 191, No. 2, February 1990, pp. 39-40.

Waight, V. H., "Backup Power for Traffic Signals," *ITE Journal*, 525 School St., N.W., Ste. 410, Washington, DC 20024. Vol. 60, No. 3, March 1990, pp. 45-46.

Speeds & Speeding

Womble, J. E., "Neighborhood Speed Watch: Another Weapon in the Residential Speed Control Arsenal," *ITE Journal*, 525 School St., N.W., Ste. 410, Washington, DC 20024. Vol. 60, No. 2, February 1990, pp. 16-17.

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Free, J., "Safer Takeoffs for Airliners," *Popular Science*, 2 Park Ave., New York 10016. Vol. 236, No. 4, April 1990, pp. 90-92.

Please Note: *Library is prepared by the National Safety Council Library — Robert Marecek, manager. The National Safety Council Library is unable to supply any of the materials listed here. For your convenience, the names and addresses of the publishers are listed.*

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Isman, W. E., "Emergency Response to Hazmat Transportation Accidents," *Fire Chief*, 40 E. Huron St., Chicago 60611. Vol. 34, No. 2, February 1990, pp. 58-60, 62-64, 66-68.

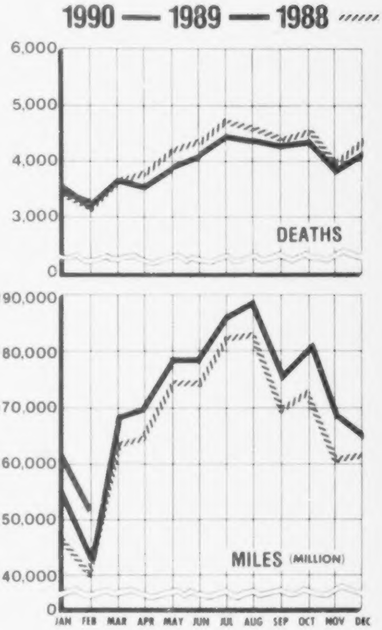
Isman, W. E., "Silhouettes and Safety," *Fire Command*, Batterymarch Park, Quincy, MA 02269. Vol. 57, No. 2, February 1990, pp. 34, 37.

February Traffic Deaths Up 4%

BY MARY E. JOHNSTON and URSULA ZUEHLKE

TRAFFIC SUMMARY

Month	Deaths 1990	Deaths 1989	Change
February	3,290	3,150	+ 4%
2 months	6,770	6,680	+ 1%
12 months (Ending February, 1990)	47,090	49,060	– 4%



Motor-vehicle deaths in February totaled 3,290, an increase of 4 percent from the February 1989 total of 3,150.

Deaths for the two-month period ending February totaled 6,770, a 1 percent increase over the 1989 two-month total of 6,680.

Disabling injuries for 1990 are estimated to be almost 244,000. These are injuries resulting in disability beyond the day of the accident, and do not include minor injuries, which probably totaled as many more.

The cost of motor-vehicle accidents for 1990 is estimated at almost $10 billion.

Based on preliminary vehicle mileage reports for this year, the estimated mileage death rate for the entire year is 2.3 (deaths per 100 million vehicle miles).

State Experience

Among the 48 states reporting February experience, 21 states and the District of Columbia had fewer deaths than in the preceding February, and 26 states showed increases in deaths. One state showed no change in the number of fatalities. For the two-month period, 20 states and the District of Columbia showed decreases in the number of deaths, while 26 states showed increases. Two states recorded the same number of deaths both years.

Maine	–53%
New Mexico	–43%
Nebraska	–41%
Vermont	–39%
New Hampshire	–35%
Mississippi	–32%
Arkansas	–29%
West Virginia	–27%
Michigan	–25%
South Dakota	–17%
California	–15%
New York	–14%
Florida	–11%
Rhode Island	–11%
Wisconsin	–11%
Connecticut	– 9%
Indiana	– 9%
Illinois	– 8%
New Jersey	– 7%
South Carolina	– 4%

Traffic Deaths by State

Deaths are reported by state traffic authorities. All figures are preliminary. To ensure proper comparisons, 1988 and 1989 figures cover the same reporting period as those for 1990.

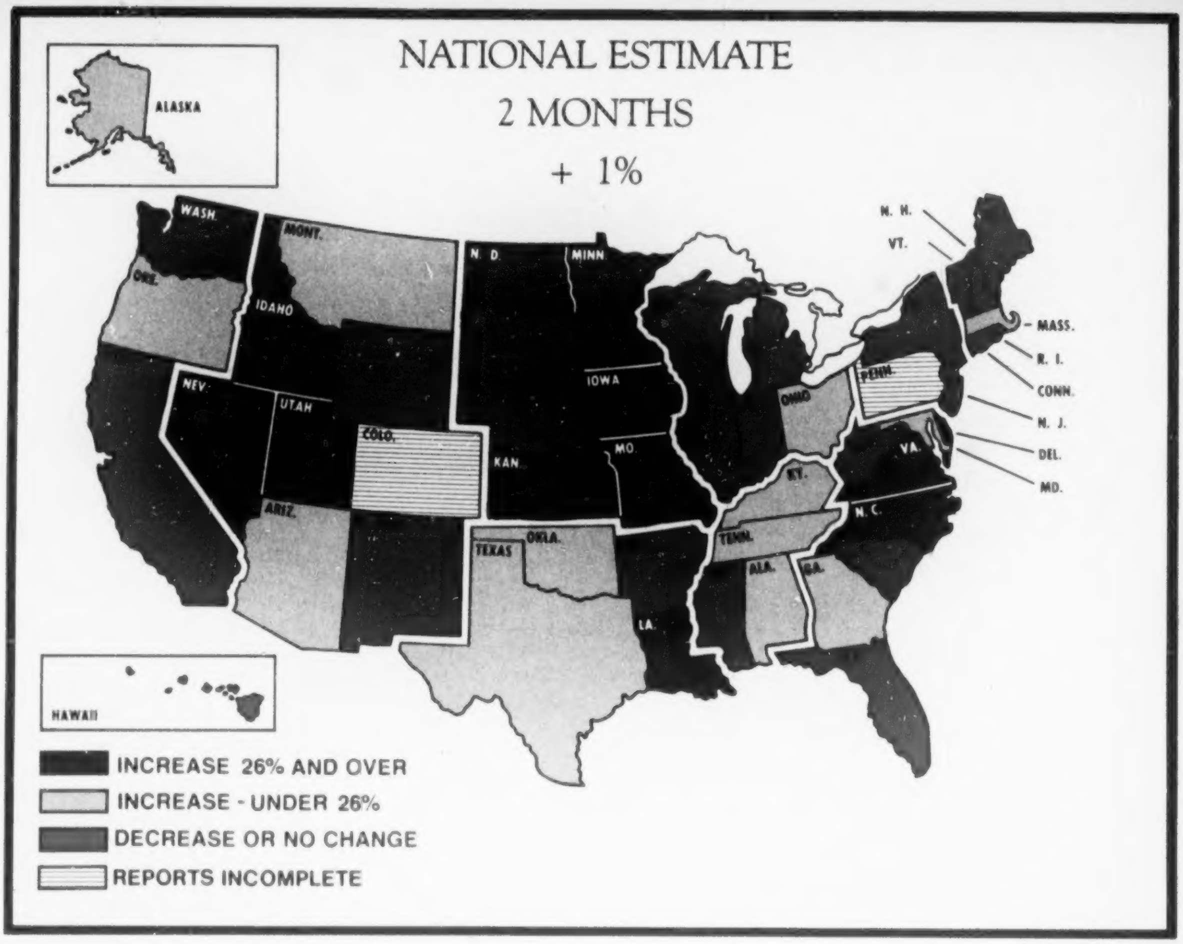
Population Rate: U.S. population rate and state population rates are the estimated annual number of deaths per 100,000 population. U.S. population rate is based on July 1, 1990, population estimate; and state population rates are based on July 1, 1989, population estimates, U.S. Bureau of the Census, Washington, D.C.

States shown in CAPS had fewer deaths in 1990 than they did in 1989 for the same reporting period.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

		DEATHS IDENTICAL PERIODS			PERCENT CHANGES			
STATE	NO. OF MOS.	1990	1989	1988	1989 TO 1990	1988 TO 1990	1990 POP. RATE	1990 MILE. RATE
Total U.S.	**2**	**6,770**	**6,680**	**6,520**	**+ 1%**	**+ 4%**	**19.0**	**2.3**
Alabama	2	145	128	112	+ 13%	+ 29%	21.1	2.0
Alaska	2	11	9	10	+ 22%	+ 10%	12.5	1.9
Arizona	2	100	94	104	+ 6%	− 4%	16.9	1.8
ARKANSAS	2	55	77	70	− 29%	− 21%	13.7	1.7
CALIFORNIA	2	611	723	671	− 15%	− 9%	12.6	1.4
Colorado	1	26	24	20	− 8%	+ 30%	9.4	1.2
CONNECTICUT	2	51	56	57	− 9%	− 11%	9.4	1.2
Delaware	2	25	18	28	+ 39%	− 11%	22.3	2.3
D. OF C.	2	7	20	8	− 65%	− 13%	7.0	1.3
FLORIDA	2	455	513	513	− 11%	− 11%	21.5	2.6
Georgia	2	225	190	217	+ 18%	+ 4%	21.0	2.0
Hawaii	2	21	21	26	0%	− 19%	11.3	1.5
Idaho	2	27	14	28	+ 93%	− 4%	16.0	1.9
ILLINOIS	2	200	218	240	− 8%	− 17%	10.3	1.5
INDIANA	2	114	125	142	− 9%	− 20%	12.2	1.3
Iowa	2	76	51	48	+ 49%	+ 58%	16.1	2.0
Kansas	2	69	51	58	+ 35%	+ 19%	16.5	2.0
Kentucky	2	131	125	104	+ 5%	+ 26%	21.1	2.4
Louisiana	2	125	95	105	+ 32%	+ 19%	17.1	2.1
MAINE	2	17	36	27	− 53%	− 37%	8.3	0.9
Maryland	2	97	89	104	+ 9%	− 7%	12.4	1.5
Massachusetts	2	90	78	61	+ 15%	+ 48%	9.1	1.3
MICHIGAN	2	176	235	212	− 25%	− 17%	11.4	1.3
Minnesota	2	68	54	60	+ 26%	+ 13%	9.4	1.1
MISSISSIPPI	2	74	109	93	− 32%	− 20%	16.9	2.0
Missouri	2	144	110	163	+ 31%	− 12%	16.7	1.9
Montana	2	18	17	17	+ 6%	+ 6%	13.4	1.4
NEBRASKA	2	24	41	31	− 41%	− 23%	8.9	1.1
Nevada	2	44	16	29	+175%	+ 52%	23.8	2.7
NEW HAMPSHIRE	2	20	31	19	− 35%	+ 5%	10.8	1.3
NEW JERSEY	2	131	141	169	− 7%	− 22%	10.2	1.3
NEW MEXICO	2	48	84	59	− 43%	− 19%	18.8	1.9
NEW YORK	2	232	271	236	− 14%	− 2%	7.8	1.3
North Carolina	2	283	177	165	+ 60%	+ 72%	25.8	2.9
North Dakota	2	10	4	10	+150%	0%	9.1	1.1
Ohio	2	193	191	198	+ 1%	− 3%	10.6	1.4
Oklahoma	2	95	85	51	+ 12%	+ 86%	17.7	1.8
Oregon	2	72	71	79	+ 1%	− 9%	15.3	1.7
Pennsylvania	1	121	124	111	− 2%	+ 9%	12.1	1.8
RHODE ISLAND	2	16	18	22	− 11%	− 27%	9.6	1.7
SOUTH CAROLINA	2	134	140	142	− 4%	− 6%	22.9	2.7
SOUTH DAKOTA	2	15	18	7	− 17%	+114%	12.6	1.4
Tennessee	2	142	140	147	+ 1%	− 3%	17.2	1.8
Texas	2	444	431	412	+ 3%	+ 8%	15.7	1.8
Utah	2	43	24	19	+ 79%	+126%	15.1	2.1
VERMONT	2	14	23	17	− 39%	− 18%	14.8	1.5
Virginia	2	158	114	115	+ 39%	+ 37%	15.5	1.6
Washington	2	105	61	74	+ 72%	+ 42%	13.2	1.4
WEST VIRGINIA	2	55	75	76	− 27%	− 28%	17.8	2.3
WISCONSIN	2	85	96	74	− 11%	+ 15%	10.5	1.2
Wyoming	2	9	9	9	0%	0%	11.4	1.0
Puerto Rico#	2	86	103	114	− 17%	− 25%	18.9	—
Virgin Islands#	2	3	4	5	− 25%	− 40%	32.4	—
			— CANADIAN PROVINCES —					
Alberta	2	61	51	41	+ 20%	+ 49%	23.1	—
British Columbia	2	92	81	71	+ 14%	+ 30%	26.1	—

#Not included in the TOTAL U.S. death count or rates.


NATIONAL ESTIMATE
2 MONTHS
+ 1%
ALASKA
HAWAII
WASH.
ORE.
IDAHO
MONT.
N. D.
MINN.
NEV.
UTAH
COLO.
IOWA
KAN.
MO.
ARIZ.
TEXAS
OKLA.
LA.
N. H.
VT.
MASS.
R. I.
CONN.
N. J.
DEL.
MD.
PENN.
OHIO
VA.
KY.
N. C.
TENN.
ALA.
GA.
INCREASE 26% AND OVER
INCREASE - UNDER 26%
DECREASE OR NO CHANGE
REPORTS INCOMPLETE

MOTOR-VEHICLE DEATHS AND CHANGES TOTAL U.S.

	Deaths				Percentage Changes				
					-Corresponding Month			4 Months Moving Avg. +	
Months	1987	1988	1989	1990	1988-1990	1988-1989	1989-1990	1988-1989	1989-1990
January	3,301	3,390	3,530	3,480	+ 3%		− 1%		− 4%
February	2,997	3,130	3,150	3,290	+ 5%		+ 4%		− 3%
2 Months	6,298	6,520	6,680	6,770	+ 4%		+ 1%		
March	3,517	3,600	3,620			+ 1%		+ 4%	
April	3,621	3,760	3,540			− 6%		− *%	
May	4,264	4,210	3,860			− 8%		− 4%	
June	4,279	4,320	4,080			− 6%		− 5%	
July	4,472	4,720	4,440			− 6%		− 6%	
August	4,815	4,550	4,330			− 5%		− 6%	
September	4,300	4,370	4,250			− 3%		− 5%	
October	4,535	4,520	4,330			− 4%		− 4%	
November	4,169	3,980	3,790			− 5%		− 4%	
December	4,020	4,350	4,080			− 6%		− 5%	
TOTAL	48,290	48,900	47,000	47,090 ‡		− 4%			

The 1987 figures are from the National Center for Health Statistics. The 1988, 1989 and 1990 figures are National Safety Council estimates.

+ Four Months Moving Average is based on changes between the totals for four months instead of one month. For example, the February figure shows the change between the totals for November 1988 - February 1989 and November 1989 - February 1990, etc. Adding several months together tends to smooth out single-month changes which may be affected by differences in the number of weekends in a month from one year to the next, random variations, etc.

‡ Deaths for the 12-month period ending February 1990.

*Less than 0.5%.

CONFERENCE ANNOUNCEMENT

INFORMATION SYSTEMS FOR HIGHWAY SAFETY:

16th International Forum on Traffic Records Systems

JULY 16-19, 1990

SHERATON BAL HARBOUR HOTEL—BAL HARBOUR, FLORIDA

Mark your calendar now to attend the *only international conference on traffic records systems* at the Sheraton Bal Harbour Hotel. The traffic records forum is cooperatively organized and supported by 15 traffic safety agencies, offering you a variety of viewpoints and vital information. Don't be left out of any of these discussions!

The 16th International Forum will provide interesting perspectives on how information systems are vital to our understanding of some of the highway safety issues facing us today. It will also provide information on the newest technological advances being applied to records systems development to offer you a balanced overview of traffic records and information system development.

Whether you deal with city, county, state, or federal records systems, whether you design, manage or use traffic records systems, whatever the scope of your needs — or size of your department or budget, you'll take home valuable information from this forum.

Nearly every highway safety discipline (enforcement, engineering, research, program management and motor vehicle administration) requires TRAFFIC RECORDS for problem identification, project planning and program evaluation. That's why these special sessions will deal with such critical topics as:

- commercial driver laws
- occupant restraint useage analyses
- DUI studies
- accident location systems
- engineering issues such as construction zone accidents
- tort liability
- optical disk/optical scanning technology
- enforcement's use of new technology
- integrating court records into traffic records systems
- evaluation of 65 mph speed limit
- and development of EMS systems
- and some 60 or more interesting and educational subjects

Plan to attend the Traffic Records Forum in July, where you will hear four days of presentations, exchange ideas with hundreds of traffic safety professionals and see what's new in the Traffic Records Showcase and in the exhibit areas.

For more information—and to receive your registration packet, please complete the form below and mail it to the address indicated. Don't wait. Make your plans to attend TODAY!

Only those persons/organizations returning this form will receive additional information on this important forum.

NAME(S) OF ATTENDEE(S) ____________________

____

ORGANIZATION ____________________

ADDRESS ____________________

____

BUSINESS PHONE ____________________

Return completed form in an envelope to: Traffic Records Systems Forum
NATIONAL SAFETY COUNCIL
444 N. Michigan Ave.
Chicago, IL 60611

CALL (312) 527-4800, ext. 8405 and ask for Ted Dudzik

I did some really quality networking today. This is definitely the place to meet the right people.
You really do learn a lot at Congress, don't you? I mean about the important stuff you can use right away.
Did you see that exhibit featuring interactive video training? What a great idea!
In Las Vegas, the price is right! The airfare, hotel and food are a real bargain.

National Safety Council

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October 28–November 1, 1990
Las Vegas, Nevada

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- 180 Educational Sessions Concerning the Important Issues in Safety and Health
- 15,000 Participants from Occupational Safety and Health and Other Fields

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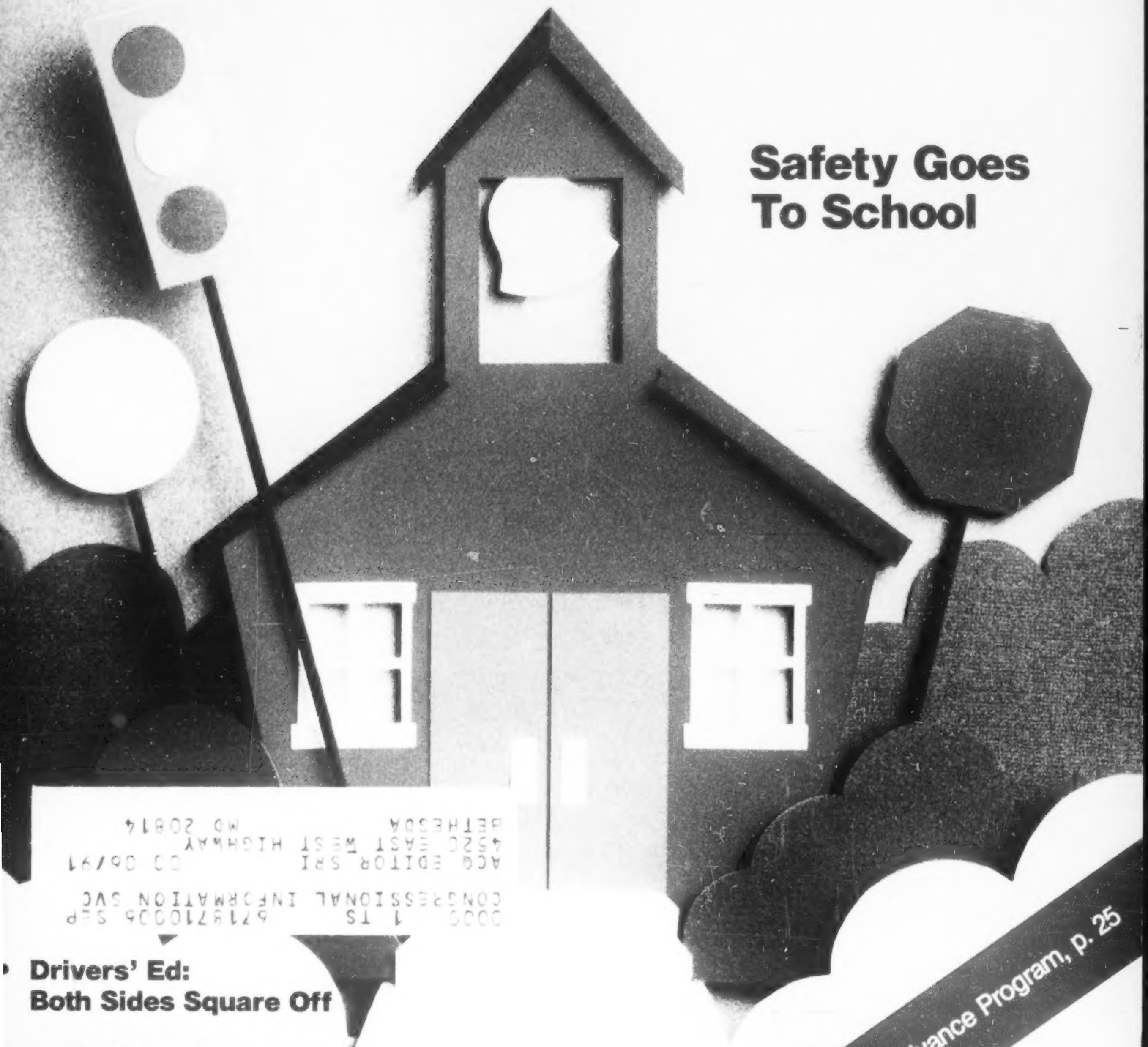
September/October 1990

$4.75

National Safety Council

TRAFFIC SAFETY



Safety Goes To School

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- Drivers' Ed: Both Sides Square Off
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VISION '90s Advance Program, p. 25

Publisher: Kevin H. Axe (312) 527-4800, ext. 7101

Editorial Director: Maureen Glass (312) 527-4800, ext. 7103

Coordinator: Richard Frisbie

Managing Editor: Austin Weber (312) 527-4800, ext. 7108

Associate Editor:
James W. Lahey

Art Director: Anne F. Malone

Cover: Constructs Studio, art; Terry Vitacco, photo

Director, Publications Marketing: Kevin Shanley, (312) 527-4800, ext. 7401

Advertising/Circulation Manager: Joel Wakitsch (312) 527-4800, ext. 7404

Advertising Sales:

East
Clint Pross (312) 527-4800, ext. 7408
Midwest
(312) 527-4800
National
Diane Borker (312) 527-4800, ext. 7402

Advisors:

Noel Bufe, Ph.D., *director, Traffic Institute, Northwestern University, Evanston, Ill., vice president for traffic;* Walter D. Weiss, *group director of safety, Leaseway Transportation Corp., Birmingham, Mich., vice president for motor transportation;* Neil Boot, *director, driver improvement programs;* Ted E. Dudzik, *traffic law enforcement and police records specialist;* Jan Hazlett, *school transportation safety specialist;* Tim Kennedy, *occupant restraint specialist;* Al Lauersdorf, *alcohol programs administator;* John McCarthy, *manager, program development and training, driver improvement programs;* Harold Thompson, *manager, highway traffic safety services;* Lester B. Sokolowski, *director, motor transportation;* James Solomon, *administrator of training, driver improvement programs;* Richard L. Tippie, *director, transportation safety*

TRAFFIC SAFETY (ISSN 0041-0721) is published bimonthly by the NATIONAL SAFETY COUNCIL, 444 N. Michigan Ave., Chicago, Ill. 60611. Copyright © 1990 by National Safety Council. Printed in U.S.A. Second Class postage paid at Chicago, Ill. and at additional offices. POSTMASTER: Send address changes to National Safety Council, 444 N. Michigan Ave., Chicago, Ill. 60611.

U.S. Subscription rate: $15.20 to members of the National Safety Council, $18.98 to non-members. Quantity and foreign rates available on request.

National Safety Council
Chartered by the Congress of the United States
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September/October 1990

National Safety Council

TRAFFIC SAFETY

Vol. 90 No. 5

SAFETY GOES TO SCHOOL 7
DAN BURDEN
Florida coaches kids to walk and bike to stay alive

HIGH SCHOOL DRIVER EDUCATION DEBATED 10
AGAINST: BRIAN O'NEILL
It causes crashes by putting 16-year-olds on the road

FOR: JEFFERSON D. KEITH
It saves lives by starting youngsters out right

CRASH TESTING UP AGAINST THE WALL 13
THOMAS FRISBIE
Budgets limit value of results

HIGHWAY SAFETY SYMPOSIUM 20
JIM CASTELLI
Corridor improvement and pedestrian safety are focuses

NATIONAL SAFETY COUNCIL CONGRESS AND EXPOSITION 25
Here's the program for Vision '90s

3 Today's Traffic
4 Shortcuts
5 Two-Way Street
6 Survey
17 New Products
18 Events
19 Library
22 Statistics

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Home Office: 444 N. Michigan Ave., Chicago 60611. (312) 527-4800

Printed in U.S.A. Stock No. 311.03-050

TODAY'S TRAFFIC

Plastic Bridges?

According to the Federal Highway Administration, nearly 40 percent of the nation's 570,000 bridges need to be replaced or repaired due to structural or functional deficiencies.

Enter Dr. Abdul-Hamid Zureick of the Georgia Institute of Technology, 1989 co-winner of the Norman Medal, awarded by the American Society of Civil Engineers. In their search for "innovative and cost-effective rehabilitation techniques," Zureick and his students, under the sponsorship of the National Science Foundation, are testing Extren fiberglass I-shaped sections donated by Morrison Molded Fiber Glass Company, Bristol, Va. Using Georgia Tech's hydraulic pressing instrument, which is capable of applying 450,000 pounds, Zureick is studying the behavior of fiber-reinforced plastic structural components under various loading conditions and as protection for communications systems.

According to Zureick, plastic reinforced with glass fibers is nonconductive and "invisible" to electromagnetic signals, which would make it especially useful in shields called "radomes," which protect communications systems (antennae, military radar instruments, broadcasting towers, and weather-tracking devices) from harsh weather conditions, helping to prevent corrosion and damage without causing signal interference. Because its weight is approximately one-fourth that of steel, fiber-reinforced plastic may also be the cost-effective solution in the rehabilitation of deteriorating steel bridges.

But before this conclusion can be drawn with certainty, the research begun by Dr. Zureick last September will continue. Although results thus far are "promising," Dr. Zureick reports the need for additional testing to assist design engineers and contractors in their understanding of the static and dynamic behaviors of fiber-reinforced plastics to determine appropriate applications in response to various design challenges. For example, some plastics bend or deflect more easily than steel under certain loading conditions so that optimum shapes must be determined to minimize this feature while maximizing the strength and low-weight features.

Public Wants Safety Belt Enforcement

According to a recent public-opinion survey of 1,208 randomly selected licensed drivers older than 18 conducted by Macro Market Research, Burlington, Vt., for Traffic Safety Now, Inc., Americans favor safety belt laws 3:1 for the fifth consecutive year.

In addition, most would like to see stricter enforcement of safety belt laws by police officers. Less than 20 percent of those surveyed in states that have safety belt laws believe local police departments consider issuing safety belt citations a "high priority." Currently, 34 states and the District of Columbia have safety belt laws.

In a separate survey of law-enforcement officers, 55 percent indicated that their departments place a "high priority" on safety belt citations and 72 percent said they routinely enforce these laws.

Traffic Safety Now, Inc., is a nonprofit organization dedicated to reducing national traffic injuries and fatalities by encouraging safety belt use and educating the public about occupant-restraint systems, including air bags. Its president, Charles L. Spilman, believes this survey shows that traffic safety issues are a priority for most Americans. Since 1984, when the first state law was passed, safety belt use has increased from 14 percent to 47 percent, according to the National Highway Traffic Safety Administration. Spilman believes this to be an indication that police officers are enforcing the laws. "However, we believe increased enforcement can help us meet President Bush's goal of 70 percent belt use by 1992," he added.

The National Highway Traffic Safety Administration estimates that more than 10,500 lives have been saved as a direct result of safety belt laws since 1984.

For more information, contact Charles L. Spilman at (313) 872-0796 or Ray Carson of Casey Communications Management, Inc., (313) 423-4600.

Council Expands Syracuse Office

The National Safety Council recently expanded of its Syracuse, N. Y., Driver Improvement Programs office into a full-scale regional office serving 13 Northeastern states and the District of Columbia.

The new Northeastern Region Office (NRO) will offer a broad range of Council services, in addition to its current DDC programs. It will be the regional center for:

- Membership registration.
- Council materials and programs.
- Safety Training Institute programs.

The office will be open weekdays, from 8:30 a.m. until 4:45 p.m. (Eastern Standard Time). For further information call 1-800-432-5251.

Trend Toward Truck Safety

Fatal truck accidents declined during the 1980s, according to a new government study.

Fatal accidents involving medium and heavy trucks declined markedly from 1981 to 1982 after peaking in 1979, according to the General Accounting Office (GAO). The reason for this sharp decline is not known. After a subsequent constant plateau in truck fatalities, the GAO reports that another decline in truck fatalities occurred in 1985.

In their traffic safety report for the House Public Works and Transportation Committee, the GAO also reported a steadily declining fatality rate for all vehicles and drivers, indicating that an apparent increase in traffic deaths since 1983 "is most likely a function of increased motor vehicle activity rather than a decline in general safety."

The report also indicated that although they have a low occupant fatality rate, medium and heavy trucks have high accident involvement rates. (In determining accident rates, total miles driven and number of registered vehicles are considered to avoid rates simply reflecting a change in the number of vehicles on the road or increased "exposure.")

The number of truck occupant fatalities peaked in 1978 and then declined, with 40 percent fewer fatalities in 1987 compared with 1978. The 1987 low point is almost 20 percent less than the rate for 1975, the year the number of deaths began to increase. The GAO study, which is based on information acquired through the Department of Transportation's Fatal Accident Reporting System, thus cites a trend toward improvement in truck safety.

New Study Throws Curves

A maximum 80 percent reduction in traffic accidents can be achieved through the alteration of highway curves and adjacent roadsides, according to a University of North Carolina at Chapel Hill (UNC) study sponsored by and submitted to the Federal Highway Administration, which will share the report with highway departments throughout the nation.

Researchers at UNC report that traffic accidents are two to four times more likely to occur on one of the nation's estimated 10 million two-lane highway curves than on straight sections of the road and that these accidents are generally more serious. According to Charles V. Zegeer, program manager at UNC's Highway Safety Research Center and principal investigator for the study, "the sharper the curve, the greater the number of accidents."

Although previous studies have reported these same findings, the UNC study is the first to assess the cost-effectiveness of various road improvements alone and in combination.

Researchers combined national and state computerized files related to accidents and traffic and road characteristics to analyze relationships between these variables in traffic accidents. They found that flattening curves, adding more slope or banking, removing or relocating roadside obstacles, adding transition curves before and after main curves, and widening roads and flattening embankments can prevent property damage and save lives.

SHORTCUTS

Drug-Free Truck Drivers

Strict recommendations to curb the use of drugs and alcohol by the nation's truck drivers, improve carrier scheduling to reduce driver fatigue, make truck cabs more "crashworthy" and encourage drivers to wear safety belts are being proposed by the National Transportation Safety Board (NTSB).

A NTSB study found that one-third of the 185 fatal crashes involving trucks from 1987 to 1988 were caused by driver fatigue, and one-third of the drivers had drugs or alcohol in their systems. Alcohol and marijuana were the most commonly used drugs.

Ten percent of the fatalities were caused by medical problems, the majority from heart attacks. Only one of the drivers killed was wearing a safety belt.

Although the safety board believes that these numbers are decreasing due to federal drug testing regulations, it is considering stricter safety standards for the trucking industry including:

- Improved pre-employment background checks and screening for alcohol and drugs;
- Better training in drug recognition for supervisors;
- Testing drivers for drugs and alcohol at weigh stations and roadside inspection stops;
- Enforcement of a 0.00 percent blood alcohol level, called the "zero-zero" standard;
- National standards for post-accident toxicological reporting;
- State laws requiring testing of all drivers involved in fatal crashes, including automobile drivers;
- Requiring on-board recording devices to detect hours-of-service violations.

The 1989 Motor Carrier Safety Survey sponsored by the Regular Common Carrier Conference found that "the average truck driver believes that about one in four of his or her fellow drivers regularly drives under the influence of illegal drugs," according to Dr. Richard Beilock, associate professor of food and resource economics at the University of Florida. This was a decrease of only three percent from 1988.

Both owner-operators and drivers support drug-testing to stem this alarming practice. Eighty-four percent of the nation's truck drivers approved pre-employment testing; 90 percent favored post-accident testing; 89 percent backed testing with regular Department of Transportation-mandated physical exams; 76 percent approved "reasonable suspicion" tests; 68 percent supported random tests.

In 1989, the typical truck driver reported using a safety belt two-thirds of the time, up 17 percent from the year before; one in two reported using one all the time.

Simplistic Solution?

As an organization and profession, Driver Education has not taken an official position on the use of a driver's license to force a youngster to stay in school. However, the general consensus from discussions of leadership groups within the organization is that we are generally not supportive of the idea.

We don't think the punishment fits the crime.

We tend to agree with Gary J. Bloomfield, Ph.D., traffic safety educator with the office of the superintendent of public instruction for the state of Washington, who said in the April 1990, issue of the *Journal of Traffic Safety Education* that "on the surface this appears to be a very simple solution to a very complex problem."

Dr. Bloomfield emphasized what many have said and many others thought: "There is no rational connection between being a student and being a good safe driver." He further stated: "The connection between attending school and driving ability is so unreasonable that I ask what will be tied next to obtaining the driver's license?"

Jefferson D. Keith
Executive Director
American Driver and Traffic Safety
Education Association
Salisbury, Md.

Attack the Source

In 25 years as a safety director, I have found that the only way to solve a problem is to attack the source. I strongly encourage the National Safety Council to use its publications and the annual Congress, and its influence in our government, to discourage the use, not simply the abuse, of alcohol.

Any Comments?

"Two-Way Street" is *your* forum; a place for ideas and opinions on issues important to traffic safety professionals as well as comments about articles in previous issues of TRAFFIC SAFETY.

Please address letters to "Two-Way Street," TRAFFIC SAFETY Magazine, 444 N. Michigan Ave., Chicago, IL 60611.

Letters may be edited for clarity or because of space.

- Make the taxes on beer and wine the same level as those on hard liquor and index them to the inflation rate.
- Eliminate alcohol advertising and promotion of public events where the majority of the audience is underage.
- Ban advertising that promotes alcohol use.
- Forbid the industry to sponsor athletic events.
- Prohibit promotion of alcohol by celebrities who have a strong appeal to young people.
- Place warning labels on alcohol ads as well as liquor containers.

Max Greer
Safety Director
Reeves Bros. Inc.
Spartanburg, S.C.

More on Safety Belts

Regarding your survey on auto equipment, I know of at least five instances where safety belts prevented serious injury, and one instance where they were not worn but would have helped.

Virgil Graf
Safety Advisor
Pacific Bell
Pasadena, Calif.

Driving Attitudes

In response to our survey on public attitudes, response was mixed on whether the public is becoming less tolerant of drinking and driving. In some places it may be less socially acceptable than others.

No respondent saw any signs that "police are more likely now to consider their own driving behavior as an example to the public."

One reader, who asked that his name not be published, complained that his whole state (in the South) is deficient in traffic safety enforcement and noted that the condition of many cars and trucks owned by the state and local governments, including squad cars, "certainly does not set the proper example."

(Because he didn't want his name used, we thought it was fair to let his state remain anonymous as well, without overlooking the point he raised.)

Should Kids Drive at 16?

THIS PAGE is designed to make it easy for you to express your opinion as a traffic-safety professional on the pros and cons of high school driver education.

You can just tear out this page and send it in. Or if you have to share your copy of TRAFFIC SAFETY with others, you may want to photocopy the page. Then, if we haven't provided enough space, you can write additional comments on the back.

We'll publish what we find out in a future issue.

Mail your responses to:

TRAFFIC SAFETY Survey
Managing Editor
National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611

	Agree	Disagree	Undecided
1. Driver education should continue to be taught in high school.			
2. The driving age should be raised from 16 to 18.			
3. Licenses should continue to be issued at 16, but with restrictions.			
High school driver education *in your community* seems threatened by lack of official support.			

Comments:

Safety Goes To School

Florida coaches kids to walk and bike to stay alive

BY DAN BURDEN

IN THE FALL of 1984, Rebecca Mintz, age nine, was riding her bike to school in Miami. Concentrating on her friends in front of her, Rebecca ran a stop sign and was hit by a motorist. Rebecca died. In their grieving, her parents, Lynn and Sandy Mintz, vowed that such predictable and repetitive trauma should end. They contacted local and state officials for ideas. Then, using the talents of a friend familiar with public relations, they launched an effort to get traffic-safety education into all Miami/Dade County schools. They weren't interested in just another campaign. They wanted an ongoing, comprehensive traffic-safety education program offering skills and competency to all children in all schools.

Although traffic-safety specialists have known for years that children in America face a greater likelihood of death or disability through traffic-related injuries than through any other disease or cause, the volume and lifelong extent of these injuries appears to be overlooked. Statistics reveal that traffic trauma takes 20 times more children's lives than drugs and kidnapping combined. This is a surprise to most parents, and even many law enforcement officers. Many others still are unaware that today more children lose their lives in traffic outside of the automobile (walking and bicycling) than inside as a passenger. And, although six times as many children are killed walking as bicycling, the majority of injuries occur to bicyclists.

Local Origins

When the Mintzes began their campaign, they found know-how waiting at the Florida Department of Transportation's bicycle/pedestrian program office. Within weeks a program was underway. This program was aimed at making all children predictable and competent to deal with traffic for life. The program focused on the beginning years. Students would learn actual skills leading toward early competency in traffic. These skills would include school bus and passenger safety and bicycling and walking.

Five years later, with the ongoing help of the Dade County Citizens Safety Council, more than 100 of the 225 schools now offer 12 lessons per year in traffic-safety education. The program has been expanding by about 25 new schools each year. Although the program began as a fourth-grade curriculum, in 1990 an expanded curriculum is being offered in grades three, four and five. By 1993, most Dade County schools are expected to offer the program in all schools and in all grades, K-8.

P.E. Teachers Important

The key to the success of this program is the harnessing of the time and talent of grade school physical education teachers and teachers aids. Each teacher goes through two full days of training by their peers and a state specialist. Teachers then combine classroom with on-bike, and finally, for most, on-road training. Lesson topics expand on the earlier success of

Parents are right to insist on bicycle helmets. More children are killed biking or walking than riding in cars. (Photos by Dan Burden.)

programs such as Willy Whistle and other established school bus or passenger safety curricula.

Statewide interest in this program eventually brought more dollars through state use of National Highway Traffic Safety Administration monies, and through additional funds from the governor's energy office. More than $350,000 in funds are going into the program this year, with an equal amount planned for the next two years. But even that is not enough. A special request has been readied for the Florida legislature asking for $1 million per year during a three-year expansion of the program. The goal is to have as many as 80 percent of Florida's schools offering the program by mid-decade.

Nearly 400 Schools in Program

As of spring 1990, nearly 400 schools were offering the program in eight of the largest of Florida's 67 counties. Polk County already has the program in all 60 of its schools and has a full-time grade school traffic-safety education program coordinator. One other full-time coordinator is planned for Dade County. To help with the expansion of the program, this year the state offered six two-day training courses, reaching 400 new instructors.

Based on the early success of the program, the optimistic goal of including 80 percent of the grade school population may be reached. Expanded funding is needed to make sure. A case for traffic-safety education must be built. The real costs for such a program are made clear by comparison with other education efforts. The average school child receives about $45,000 for K-12 public schooling. For the 60 to 65 percent fortunate to take drivers-ed, about $200 of this $45,000 goes toward teaching this topic. But today, in most states, from birth through age 15, children receive an average of $1 for learning traffic-safety. Virtually all of this comes from outside the schools, usually through the time and materials of police. Although the police are effective in getting their message about traffic laws across to most children, it has little bearing on early traffic-safety skills development.

How Children Learn

Unfortunately, children during these developmental years are learning sloppy habits. They're not learning defensive street crossing and the visual and psychomotor skills needed to cope with gap assessment, hazard detection and other fundamental traffic threats. Children need practice, not just rules. They also need to expand and repeat lessons from grade to grade, learning new applications as they develop. Dr. Ken Cross, a traffic-safety research psychologist who assisted with analysis of bicycle and pedestrian accident causation for the National Highway Traffic Safety Administration, reports that early childhood habits are highly resistant to change. Only good traffic habits should be permitted.

Dan Burden is state bicycle and pedestrian coordinator for the Florida Department of Transportation. As a cyclist, he led a biking expedition to Argentina and founded the Bikecentennial Inc., the Bicycle Federation of America Inc. and Bicycle Forum magazine.

He has written two books and contributed many articles and photographs to magazines on cycling and safety issues. He is an advisor to the National Safety Council.

Additional information about the Florida program is available from the Florida Department of Transportation, 605 Suwannee Street, M.S. 19, Tallahassee, FL 32399-0450. Phone: 904/488-4640.

Statistics in this article are adapted from the Safe Kids Are No Accident Campaign, 1986-87 database using records of the National Safety Council, Federal Bureau of Investigation and Library of Congress.

> **"They weren't interested in just another campaign."**

"With this kind of a head start in good traffic habits," said Dade County's traffic-safety education program director, Bill Harris, "Dade County's children will have a jump on the even higher traffic risks in their early and later driving years. The exact same searching, gap assessment and hazard detection skills are needed under the later demands of driving."

National Spark

Concepts for this training came first from Bike-ed '77, a federally sponsored conference to identify effective traffic education countermeasures to accidents. It was at this meeting that Dr. Ken Cross, Don LaFond, Richard Blomberg and other researchers addressed the basic causes of childhood traffic accidents and developed models for intervention. Two years later, these concepts were tested in Missoula, Mont., using a pilot fourth-grade curriculum. The program was designed specifically for physical education teachers, a profession that makes use of the energy and attention of children in an often positive outdoor learning atmosphere.

After the pilot year, and following a testing and evaluation period, the program was expanded to most Montana schools by the mid-80s, just when Florida was getting started. A similar start in Hawaii public schools began in 1989. Last spring Vermont launched its own program, using similar principles. The New York state legislature is considering the need to support a comprehensive education program, and Maryland also is looking at it. North Carolina and other states are considering the role of physical education teachers in developmental traffic-safety education.

Lacking any formal evaluation studies, we turned to Montana's highway safety specialist, Al Goke. In checking bicycle traffic accident records, Goke was unable to find a single Montana child covered by this program who has been involved in a medically treated bicycle crash during the seven-year period 1980-87.

The Future

During the fall of 1989, Don LaFond, a Maryland Department of Education curriculum and traffic-safety specialist, led 40 of the nation's best physical education, traffic-safety and curriculum writers through eight days of program analysis, and then drafted lesson plans and teaching objectives for the expanded K-8 program. Although many months of added work are still needed to prepare final printed lessons, sample full-grade lessons are being offered to more than 300 Florida schools for testing of the grades three, four and five this year. The expanded program covers school bus and passenger safety and pedestrian and bicycling skills development. The program does not cover alcohol, since the program looks more at skills than attitudes. For those wishing to use proven alcohol lessons, the curriculum can be adapted.

According to Roger DiBrito, a Missoula, Mont., phys-ed teacher and one of the original architects of the program, "the curriculum and teaching exclude nothing and no one." Police and other traffic-safety experts will continue and indeed expand their roles, when involved in this program. However, the program is focused on the teachers who know and work with children in their overall motor skill development.

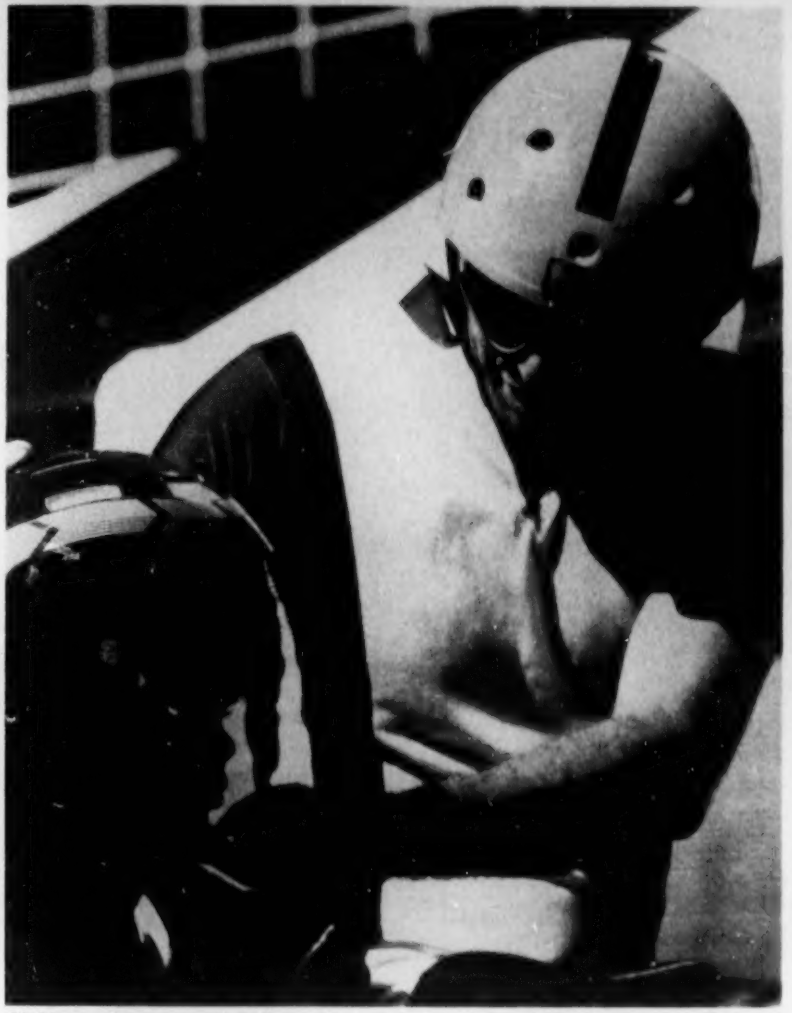
"Missing Ingredient"

"We have found the missing ingredient for ongoing traffic-safety development," reports DiBrito, who is the president of Montana's Alliance for Physical Education Teachers.

DiBrito also has a vision that one day many, if not most, public schools will employ full-time physical education teachers in the grade schools who will actively teach the entire K-8 curriculum. According to DiBrito, "Many communities still view physical education as a luxury. When these professionals take on the added role of teaching kids to be safe in the most at-risk activity of their lives, the profession will be more secure and entrenched."

Average spent on traffic safety: $1 per pupil.

These Florida, Montana and Hawaii programs, however, must each fight an uphill battle. Every dollar for curriculum writing, video lessons and other essential developmental steps is being granted slowly. Virtually all schools that have launched the program have held onto the training despite hardships. "This program becomes the most popular physical education topic for kids, parents, principals and phys-ed teachers in virtually all schools," reports full-time traffic-ed specialist Rod Jamison of Polk County, Fla. Jamison, formerly a West Virginia drivers-ed teacher, now travels around Florida, coaching, convincing and committing new school districts to follow Polk County's lead. Jamison's salesmanship is persuasive. He and his fellow physical education staffers are hard to turn down. They know the program works, and they sell the concepts with enthusiasm. Six other Florida school districts are waiting to join the first eight counties. With new funding for needed training, bikes, helmets and other essentials, these counties will join the program.



Children who learn safe habits will be safer on the road all the rest of their lives. New program tries to teach them early.

Resistance at First

But each school must be convinced slowly. There is a lot of resistance at first. "We start with the peers in the phys-ed staff. When they become convinced, and when they work out the little bugs, such as solving class scheduling and teacher loads, or addressing the issue of head lice in helmets, then others follow," reports Marvin Hertz, one of Dade County's six-year veteran administrators of the program. Dade had three schools drop the program in its six-year history. These schools simply could not find a place to store the bicycles. "When we find an affordable solution, all three will be back, full speed ahead," reports Hertz. He retired earlier this year after 30 years in physical education. He now works as a consultant to assist the statewide expansion of this program.

How can other communities or states begin? He suggests that a key administrator attend one of Florida's training courses, study the curriculum and see how the actual lessons are taught. Once the concepts are understood, sharp administrators will know how to apply the principles in their own settings. School districts with 10 to 20 schools can be 100 percent operational within two years. Larger districts like Polk County, Fla., with 60 schools, can also be fully operational within two years. "All it takes is commitment," reports Bob Mariotti, the administrator who made it work in Polk County.

Brian O'Neill is president of the Insurance Institute for Highway Safety and the associated Highway Loss Data Institute. He is the author of numerous scientific papers and co-author of The Injury Fact Book.

ANTI- High School Driver Education

It causes crashes by putting 16-year-olds on the road

BY BRIAN O'NEILL

WITH TIGHTER and tighter public school budgets, high school driver education is coming under closer and closer scrutiny. The basic question is, should it be part of the public school curriculum? Many parents and most driver-ed instructors would say yes. On the other hand, many highway safety experts would say no. The answer depends on what's expected of such courses and what measures are used to assess them.

High school driver education is one way — not the only one, but a popular and perhaps a good way — for teaching basic driving skills. If this were the only measure by which driver ed were judged, it would be noncontroversial. Indeed, it does help teach young people to drive. But a much more ambitious purpose is usually claimed for high school driver education, namely that it's an effective way to reduce teenage involvement in motor vehicle crashes by producing safer drivers. In some instances, such claims become extreme, with advocates of driver education programs

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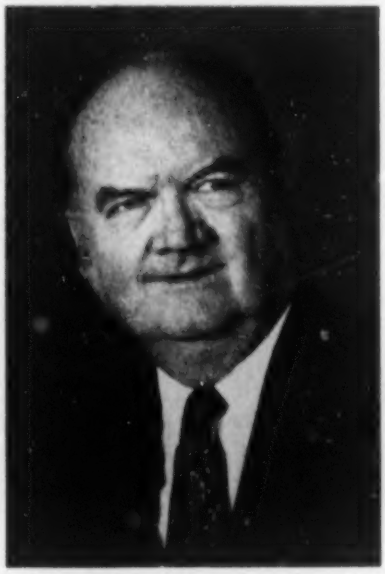

Jefferson D. Keith is executive director of the American Driver and Traffic Safety Education Association in Salisbury, Md.

FOR High School Driver Education

It saves lives by starting youngsters out right

BY JEFFERSON D. KEITH

RIGHT NOW the real question concerning High School Driver Education (HSDE) is not whether it is valuable, or whether it is outdated, or whether the legal driving age should be raised or whether remaining in school should be mandatory for retaining a license. The real question is whether HSDE will even exist in the next five to seven years. If present trends continue, the demise of HSDE is a distinct possibility.

Driver education has little visible support among top-level decision-makers in federal, state or local government. The system faces a critical shortage of certified driver education teachers. Fewer and fewer colleges and universities are offering the course. It has become practically impossible for schools to obtain vehicles for the driver education program. Instead of authorizing modifications to strengthen and improve the driver education program, administrators are directing cutbacks and changes that make continuation on a meaningful basis very difficult.

In the early 1980s the National Highway Traffic Safety Administration (NHTSA) decided driver educasuggesting this is the only way to produce safe drivers. And it's here that such advocates get into trouble because, on the basis of improving safety, high school driver education isn't fulfilling its promise.

Results Disappointing

We know a lot about the effectiveness of high school driver education in preventing crashes, and virtually all of what we know is disappointing. Study after study conducted in this country and elsewhere indicates that driver ed has failed to reduce teenage involvement in motor vehicle crashes.

In fact, extensive research shows that trying to reduce crash involvement by drivers of any age — not just teenagers — through training is largely unsuccessful. There's no reason to expect major breakthroughs in this regard in the future, so it's exceedingly unlikely that we'll ever be able to teach or train drivers so that they have fewer crashes.

Even if driver education programs could be improved in the future to produce safer drivers, we've got to accept that, in the meantime, current programs don't accomplish this. On the contrary, high school driver education is making the problem of teenage crash deaths and injuries worse instead of better. There's convincing evidence that the availability of such programs results in teenagers getting their licenses sooner than they otherwise would. This, in turn, increases the per capita crash rate of teenagers.

Research says training doesn't cut crashes much.

This disturbing consequence of high school driver education has led some people in the field of highway safety to advocate eliminating such programs from schools as a way of delaying licensing and thus reducing the crash death and injury problem. Others, while acknowledging the problem, have argued we shouldn't focus on high school driver education because society has decided, in most states, that 16-year-olds can get licenses, even though it's understood their crash rates will be high.

European Kids Don't Drive

Why don't we have tougher driver training and licensing programs, as many people assume is the case in European countries? What they actually do in most of these countries is prohibit 16-year-olds from driving cars. Then, they make it virtually impossible even for 17-year-olds to get licenses because of training and other obstacles. The result is that they effectively delay licensing, a sure way to reduce teenagers' crashes. The more straightforward way to delay licensing is simply to raise the driving age.

Parents who spend many hours acting as unpaid chauffeurs to their children often believe 16 is a reasonable age to get a license. And teenagers themselves usually want to get licenses as soon as possible. But from a safety standpoint, there's no doubt that 16 is too young for unrestricted driving privileges. The best compromise between safety and mobility is probably to restrict — but not prohibit — driving by teenage beginners. For example, nighttime driving curfew laws have been shown to reduce young people's involvement in crashes during the affected hours.

The choice of where to set the min-

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tion was not a national priority. That decision, strongly influenced by an unjustified broadside attack on driver education by the Insurance Institute for Highway Safety and repeatedly supported by the appropriate congressional committee, is now really being felt. As long as NHTSA maintains that ill-advised position, other decision-makers down the line will be taking the same easy way out. As a result, the very desirable goals top-level decision-makers have set for highway traffic safety will be pipe dreams. Without a solid high school driver education program, highway traffic safety problems will continue to mount.

Statistics

Statistics released recently by NHTSA about the effects of alcohol on traffic safety showed that nearly 27 percent of all fatally injured 15- to 19-year-olds were intoxicated. But from 1987 to 1988 the number of intoxicated drivers ages 15 to 19 involved in fatal crashes *decreased* from 2,187 to 1,497, while the total number of 15- to 19-year-olds killed increased from 7,690 to 8,167.

The statistics can be used to emphasize the need to focus attention on elements of traffic safety other than drugs, drinking and safety belts. What is the other side?

The real question is whether high school driver ed will still exist.

If only 10 percent (600,000) of all police-reported accidents are alcohol related, that means 90 percent (5,400,000) of police-reported accidents are caused by something other than drinking.

If just under 50 percent of all traffic fatalities are related to alcohol, then more than 50 percent of such fatalities are caused by something else.

If fewer than 38 percent of all fatally injured drivers are intoxicated, then more than 62% are not.

If fewer than 25 percent of all drivers involved in fatal crashes are intoxicated, more than 75 percent are not.

The fact that the number of intoxicated fatalities among 15- to 19-year-olds decreased while the number of fatalities from other causes increased emphasizes that something other than alcohol causes accidents. The braggadocio manner of reporting this fact appears to say, "It's not whether they were killed that's important, but whether they were intoxicated when they died."

Dramatic Improvement

The most dramatic improvement in traffic safety over the last 25 years came about through national emphasis on the total systems approach, coordinating 18 different standards or guidelines. The NHTSA decision referred to earlier also included removing 12 of those guidelines from their program to focus on only six. [That action motivated the deterioration of the total systems approach to improved traffic safety.]

We argue that this reduced emphasis on quality driver education, among other important segments, is the major "something else" contributing so significantly to traffic fatalities. At a time when the need for strengthening and improving high imum age for licensing, like the choice of whether to eliminate driver education or keep it in our high schools, is essentially political and should be made by adequately informed policymakers. Unfortunately, such choices too often are made under a deluge of claims and counterclaims but without enough hard facts. So here's one hard fact backed up by an abundance of research: While high school driver education may be a good way to teach the vocational skill of driving, it doesn't reduce deaths and injuries from motor vehicle crashes caused by teenagers. Claiming that high school driver education lessens this problem is ignoring reality.

Night curfew for teen drivers good compromise.

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school driver and traffic safety education is critical, the matter goes untended, ignored in areas where positive action could produce dramatic results.

When a novice driver acquires a license in any jurisdiction, that person is entitled to drive anywhere, regardless of the quality of the preliminary training. That being the case, why should one state be motivated to maintain quality HSDE when surrounding states ignore such needs saying, "If NHTSA says it isn't a priority, why should we worry about it?" More and more educators are saying, "It's not our job."

An esteemed educator of the past (Horace Mann) said, "Schools exist to teach people to do better that which they will be doing in any event." No statement ever made a better case for high school driver education. When HSDE was riding the crest from the mid-1960s to the mid-1970s it was recognized as a valuable part of education. Why?

What Parents Want

Parents wanted their youngsters to be taught safely and well by prepared professionals. Members of the community recognized it as the proper functioning of their educational system, meeting a defined need, addressing the growing traffic safety problem. It was available to youth at a prime time in their learning process. It tied together what all the other courses taught better than any other means. Built on real-life experience, it became a real slice of life on a firsthand basis. It produced quicker positive return and long-range benefit than anything else taught in school. The fact that these values do exist tends to be supported by the "other side" of the statistics alluded to above.

There are those who say driver education is not doing the job. You cannot make such a claim without first clarifying what driver education really is. Quality driver education is doing its job wherever it is cultivated and permitted to exist and function as it was designed. As the quality of a program declines so does its effectiveness. It is not driver education that should be faulted or condemned. Those who determine the nature of the program — administrators, principals, county council members, legislators and regulators and all who are involved in directing and allocating funds — are the ones who should be called to task.

Youngsters have to learn to drive sooner or later.

Most of those adverse to driver education are powerful and sufficiently endowed to be heard and influence decisions. They lump ALL driver education, from the highest quality program to the poorest, into one category and condemn the entire lot. There are objective, definitive, scientifically conducted studies showing that students who take driver education have better driving records than students who have not taken the course. There is no evidence that driver education doesn't produce positive results.

There is strong support for the view that new drivers should be more carefully supervised and required to operate under more restrictions than currently prevail in most states. I certainly agree with that thinking. I also recognize the desirability and advocate the development of a continuing educational plan for the post-licensing period between 16 and 18. On the other hand, I think it is asinine to consider raising the driving age to 18.

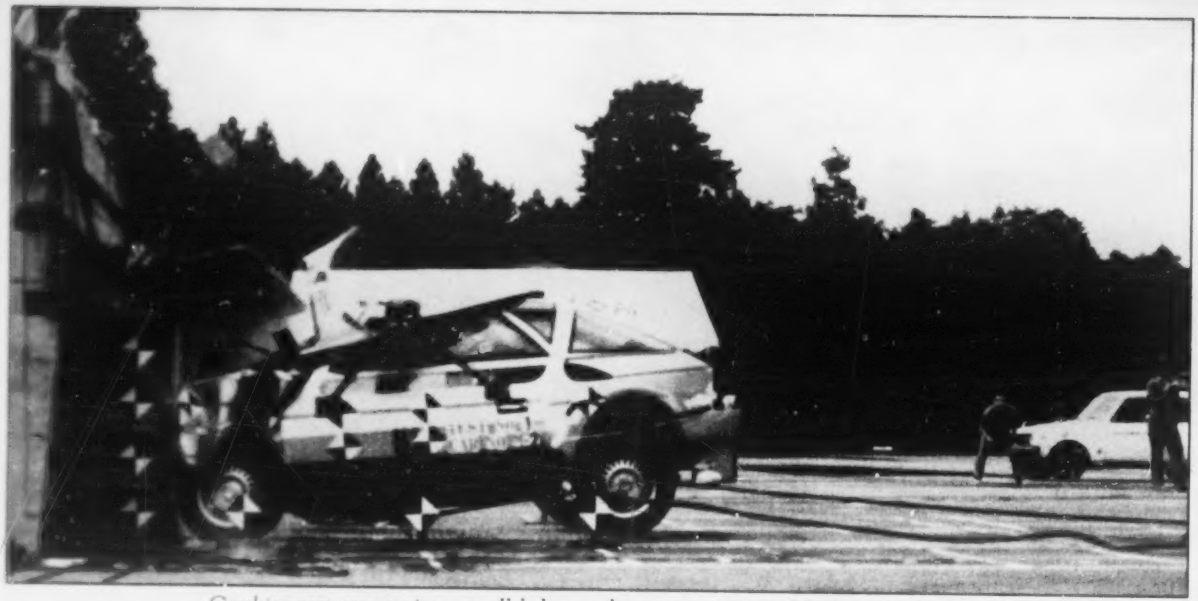
It is obviously true that eliminating licensing prior to 18 will reduce deaths in the 15 to 17 age group. It is equally true that raising the legal driving age to 21 would prevent even more accidents and fatalities. Those who advocate licensing at 18 overlook the fact that the greatest number of fatalities from traffic accidents each year occurs in that particular age group. The "raise to 18" position, held predominantly by people from densely populated areas, also overlooks the tremendous economic hardships it would force upon rural/agricultural states and communities.

The need for quality driver education is greater right now than it has ever been, but less is being done about it. The solution is not in avoiding the issue of improved driver and traffic safety education. The solution is in the more intelligent redirection of funds currently being used on glamorous superficial issues.

Consider a recent statement by a veteran New York City paramedic: "I have witnessed endless carnage on our streets and highways. I believe the most prominent contributing factor to the mess I witness daily is poor driving skills." In his opinion, "The most effective action federal highway officials could take would be to make states require greatly improved driver training as a condition for receiving federal highway money." Discussions with like specialists across the country confirm that thinking.

It is indisputable that not enough has been done to keep driver education updated. That is not the fault of the profession. The desire on the part of the profession to do what has to be done to get back on today's track exists in abundance. The know-how is there and could be implemented in a manner that would rekindle national interest. But the top-level decisionmakers who think they know how to eliminate traffic safety problems without addressing the issue of driver education, and NHTSA is at the very top of the heap, find it much easier to dodge and hide.

If present trends prevail, this country will eventually find itself starting over from scratch in driver and traffic safety education. Then it will be much more difficult to exert the necessary effort to turn things around.



Crashing test cars against a wall helps car buyers compare models for safety in frontal collisions. But test results say nothing about side collisions, which kill 8,000 people a year. (NHTSA photo.)

CRASH TESTING UP AGAINST THE WALL

Budgets limit value of results

BY THOMAS FRISBIE

FOR YEARS, efforts to interest American auto buyers in safety features met the same fate as the vehicles used in crash-testing. They hit a brick wall.

Now, however, there is a surge of public interest in safer cars. More buyers want to know which cars are safer, and automobile companies are basing advertising campaigns on safety themes. As a result, there is a call from public-interest groups for more types of crash testing and more complete data from existing tests.

In fact, if a suitable image were sought to replace the old brick wall of public indifference, it might be that same wall equipped with modern air bags.

"There is no question that people are more safety conscious," says Brian O'Neill, president of the Insurance Institute for Highway Safety, a research organization funded by casualty insurers. "Surveys of dealers and all sorts of information show clearly that safety is very high on the consumers' lists when they are thinking of buying a car. Interest in safety has been growing clearly in the past few years."

As consumers have become more safety conscious, so have automakers and the federal government. But that has raised a new question: Would existing auto crash tests hold up well under a rigorous safety examination?

Test Models

Today's crash tests come in two basic models, neither of which has lots of fancy options. The first model is a 30 mph frontal crash done by automakers. The second is a similar 35 mph crash test conducted by the National Highway Traffic Safety Administration (NHTSA). Many people would like to add a third model — side-impact crash-testing — but numerous delays, including a dispute over design of the dummies to be used in the test, have kept that model on the drawing board for years.

The 30 mph test is done to every type of passenger car that automakers put in their showrooms. Manufacturers smash up hundreds of cars each year at private testing facilities to ensure that their designs meet federal safety performance requirements. The results of those tests are not made public, and auto manufacturers are

This crash test, featured in TV commercials, put a living person behind the wheel to demonstrate the efficacy of air bags. (Chrysler Corporation photo.)

required only to certify that each model meets NHTSA safety standards. Occasionally, NHTSA double-checks an automaker's certification by buying a vehicle and testing it for compliance.

All passenger cars sold today must pass the 30 mph test. To do so, they must meet an array of testing requirements. For example, forces on instrumented dummies in each car must be below specified levels, the steering column cannot move rearward more than a certain amount, the windshield must be retained in place and the hood of the car cannot come close to a defined area around the windshield. The dummies in the car must not experience an impact that would kill or seriously injure people.

NHTSA's dummy is too much of a, well, dummy.

Auto-safety experts say the 30 mph crash test requirements have been a success. In fact, similar tests involving dummies were used to establish federal rules on safety belts and child restraints.

"I think there is no question that the 30 mph standards have clearly upgraded the safety of cars," O'Neill says.

But the 30 mph test is only half the battle for a new auto model. The more popular auto models must also undergo NHTSA's 11-year-old New Car Assessment Program, which includes a 35 mph crash into a concrete wall.

The 35 mph crash test is more helpful to consumers trying to compare the safety features of various models. Each year, NHTSA buys 30 to 40 vehicles, puts instrument-laden dummies into the driver and passenger seats, and crashes the cars into an unyielding wall, which reproduces the crash forces of two same-sized cars colliding at 35 mph or an auto traveling at 70 mph hitting a parked car. Such a crash is more serious than most highway accidents because even on high-speed roads, drivers generally hit the brakes before impact.

"It's a very severe test," says Tim Hurd, NHTSA's chief of public affairs. "All of the energy of the crash goes into crumpling up the car. The wall does not move or change its momentum."

Help for Car Buyers

Although NHTSA has, until recently, labeled its New Car Assessment Program "experimental," O'Neill says it has been quite helpful for consumers. NHTSA publishes the test results to help car buyers compare the safety performance of various models in the same weight class.

"It clearly is a measure of how well the cars are doing in frontal crashes. It tells you quite a bit. The frontal crash is the crash that accounts for 50 percent of the deaths and serious injuries on the highways," O'Neill says.

In fact, calling the New Car Assessment Program "experimental" was simply "sort of a euphemism for saying that (the tests) still are somewhat unpopular among the manufacturers," O'Neill says.

But those tests are part of a focus on auto safety that has been growing more popular with the public. The old adage that safety doesn't sell has been buried under a barrage of new advertising emphasizing the protection that various models offer their occupants.

One current advertising theme, for example, is: "Building a safer automobile, Cadillac style." A 30-second network TV spot for Chrysler Corp. this year showed a real driver walk away unharmed after crashing a Plymouth Acclaim into a steel wall at 20 mph Chrysler is also making the air bags it installs in all its domestic cars part of its "Advantage: Chrysler" ad campaign. Audi is trumpeting the success of its air-bagged Audi 100, which received the top rating in recent NHTSA crash tests. An ad for Subaru depicts a Subaru Legacy wagon braking just short of a wall to show off the vehicle's anti-lock brakes.

Public Interest in Safety

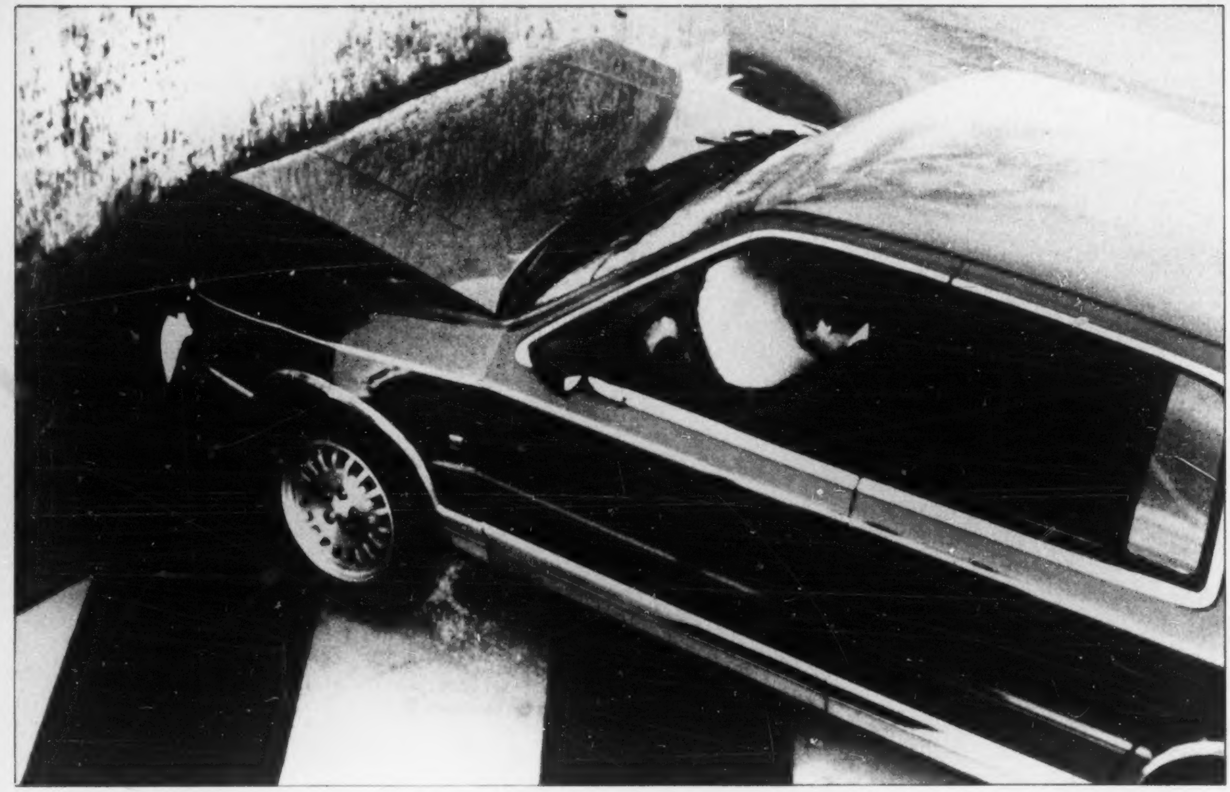
Why is the public suddenly more interested in safety?

"I think there are a lot of things that may be contributing to it: the fact that we are more health conscious and the fact that people are much more aware of the risks of the highway because of traffic densities and the speeds that they are traveling at," O'Neill says.

That's why Rosemary Dunlap, president of Motor Voters, says it's time to increase NHTSA's funding for crash testing above the $980,000 allocated for the 1990 fiscal year. Motor Voters is a nonprofit group of several hundred dues-paying members that helped enact California's "lemon law," regulating defective cars in 1979 when Dunlap lived in that state. Today, Motor Voters is based in Dunlap's new home in McLean, Va., and is dedicated to making cars safer. Dunlap now credits NHTSA and its director, retired Army Gen. Jerry Ralph Curry, with rejuvenating the agency's commitment to educating the public about the need to have both seat belts and air bags.

Existing tests don't even measure for side impact.

"There is widespread support for NHTSA research funding because you get such tremendous benefits from those programs," Dunlap says. "Auto accidents are the leading cause



of death among people under 45. We lose more potential years of life to car crashes than to any other cause. Car crashes also are the leading cause of brain injury, spinal injury, epilepsy, quadriplegia and paraplegia, and they are a leading cause of blindness."

More funding is needed partly because crash-testing is an expensive program, one that is done by no government outside the United States, Dunlap says. More money would allow a wider range of tests.

Only a "Snapshot"

One weakness of the existing New Car Assessment Program is that the 35 mph crash tests provide only a "snapshot" of how a particular model performs in one type of accident. The test measures only three types of injuries on a dummy of just one size. Cars that outperform other models in that test wouldn't necessarily do so at other speeds or in side crashes, off-center frontal crashes or rollovers. In fact, NHSTA's frontal-only crash-testing may have resulted in cars designed to do well in those tests at the expense of being as safe as possible in other types of crashes.

On the other hand, cars that do poorly in crash tests don't necessarily compile substandard safety records in actual highway experience. A 1984 study by the Insurance Institute for Highway Safety indicated that drivers of cars with poor scores in the 35 mph crash test were more likely to be killed than drivers of vehicles with good scores. But that conclusion doesn't apply universally. For example, the 1989 Peugeot 505S, a medium-sized car, fared so poorly in the NHTSA test that *Consumer Reports* magazine concluded a human occupant probably would not have survived it. Motor Voters has analyzed Peugeot's test results since 1979 and has advised people not to buy one. But actual highway accident data, which are affected by the types of people who drive certain cars as well as road conditions, show that people in Peugeots are not injured more frequently than people in most other types of cars. A spokesperson for Peugeot of America told *The New York Times* that crash tests don't take into account features that help drivers avoid accidents, such as rack-and-pinion steering, independent suspension and anti-lock brakes. Other safety features not present in all cars include rear-seat shoulder straps, automatic belt systems, designs offering maximum visibility and high-traction tires.

Automakers don't have to release test results.

Highway Experience

Another factor that skews NHTSA's test results is that in actual highway experience, heavier cars fare better than lighter ones because they absorb less of the impact. Theoretically, in a crash between a large car and a small one, the large car could experience forces significantly less than those in NHTSA's 35 mph crash while the small car would be crumpled by forces that were measurably greater. Even if the smaller car had outscored the larger one in the NHTSA tests, it wouldn't necessarily do so on the highway. That's why NHTSA advises consumers to use the test results only to compare models that have weight differences of 500 pounds or less.

A third factor that makes NHTSA's test results hard for consumers to analyze is that injury ratings recorded by dummies don't reflect the difference in impact severity between hitting an air bag and slamming into part of the car's interior. A head-injury criteria index (HIC) of 900 is less serious if the dummy hits an air bag than if it reflects a person hitting a forehead on a steering wheel because the air bag disperses the impact. (An HIC of 1,000 is the threshold above which serious injury or death can be expected. The dummies also record chest-acceleration forces and impact on each femur.)

NHTSA test results of the two-door Toyota Celica with air bags showed the Toyota had an HIC of 834 while the Mitsubishi Eclipse with motorized seat belts had a driver's HIC of 772, Dunlap says. But in an actual accident, a person might be better off in the Toyota because the ability of the air bag to spread out the impact would more than make up for the higher HIC, she says. The difference is even more pronounced in chest-impact tests.

Starting with the 1990 model year, all cars were required to have automatic safety belts or air bags. Last winter, NHTSA announced it plans to extend those requirements for automatic crash protection to vans and light trucks.

Results Don't Apply

Even if a car has an air bag, the test dummies are securely belted into place before the crash. Therefore, NHTSA's tests results don't apply to motorists who don't wear seat belts or who don't keep the belts snug.

Kennerly Digges, who worked at NHTSA for 15 years and who directed the agency's crash-testing program, says one of the key problems of the tests is that NHTSA's dummy is too much of a, well, dummy. The dummy was designed some two decades ago to measure the effectiveness of seat belts in reducing injuries, and it isn't sophisticated enough to accurately gauge forces on restrained passenger dummies, Digges says.

"A very serious problem I see right now is the fact that the dummy that is used in frontal testing has not advanced with the same rapidity as the protection," says Digges, who now is a professor of engineering at University of Virginia, Charlottesville. "The dummy is still an instrument that is basically designed to tell the difference between occupants who are restrained and unrestrained. . . . Now you are trying to use that unsophisticated dummy to measure something much more precise."

But declining budgets at NHTSA in recent years mean the agency doesn't have $10 million to $12 million to develop a new dummy, he says.

How can consumers get a clearer picture of which cars are safer?

"The first priority would be to get more accurate information in frontal crash tests. . . . Some people would advocate that automakers should release data on the (30 mph) testing they do and should be required to test in many configurations and report on that," Dunlap says. "This would give a number of benefits. You would get more data on such things as angle crashes and side-impact crashes for less cost than is being assumed by the government.

"Now you are getting one snapshot of a vehicle and how it is performing, and you could get a lot more information if you had a lot more snapshots."

NHTSA originally did provide additional "snapshots" by doing some angle and rear crash tests, but the agency gradually phased those tests out. However, an important new snapshot will become available in future years through side-impact crash-testing.

Cars with poor test grades are not necessarily unsafe on the highway.

Side Crashes

Each year, about 8,000 people die and 23,000 are injured seriously in accidents in which autos are struck from the side. Side-impact crashes cause more highway injuries than any other type of crash, except frontal collisions. Studies by General Motors Research (GMR) have found that side crashes account for some 32 percent of fatalities. While most frontal collisions occur at night and generally involve young people and a high incidence of drug or alcohol involvement, most side crashes happen in daytime and involve older drivers with little drug or alcohol impairment, GMR research shows.

The importance of side-crash testing may grow as the installation of air bags blurs differences among cars in frontal crashes. When air bags are added to cars, the wide range of test results from model to model narrows.

For years, federal officials have considered requiring automakers to meet side-crash standards. To meet those standards under the original federal proposal, automakers would have had to use a new dummy called Sid (Side Impact Dummy) that was developed by government researchers to record impact forces when a car collides sideways with either stationary or moving objects.

Sid and Family

But automakers, including General Motors, worried that Sid may not be up to the job. GM designed a different dummy, Biosid, and there is a third dummy as well, Eurosid, developed by a consortium of European car producers. Unlike Sid, which is armless, Biosid and Eurosid have arms. All three dummies include sensors and other instruments to measure the force of side-impact crashes.

Critics argued that delays in setting side-impact standards benefitted automakers economically while people continued to die unnecessarily in accidents. The Center for Auto Safety, a 20-year-old nonprofit organization based in Washington, D.C., called the search for an ideal side-impact requirement and test dummy "paralysis by analysis." The center has proposed a set of tests and strict injury criteria that it estimates could save 1,000 lives a year.

Deaths or injuries frequently occur in side-impact crashes when people are thrown out of vehicles or rammed by door parts. Side-impact crash-testing could help lead to new designs, such as energy-absorbing body panels or redesigned padding and arm rests, that could reduce highway casualties. Passenger cars now are required to have beams in the side doors, but they have not had to meet any testing requirements.

"There is no question that getting a dynamic crash-test standard for side impacts has taken longer than it should have," O'Neill says.

Meanwhile, safety activists say more reliable information for safety-conscious consumers will translate into a stronger marketplace for safer cars. And that, they say, is the best way to get automakers to improve designs. Their fear is that the push for significantly better crash-testing data, in an era of tight government budgets, could wind up hitting a brick wall of its own.

NEW PRODUCTS

Photocop

Automated enforcement of speed laws is now available to law enforcement agencies. PhotoCop, the new photo-radar system designed and manufactured by Traffic Monitoring Technologies, is the most advanced traffic radar device available.

The PhotoCop unit includes a 70-mm camera to obtain quality photographs, a VCR to record traffic and speed, a lap-top computer for operator use, a display mounted on the front of the vehicle to show the violator's measured speed, and a narrow, low-power Ka Band radar that is virtually undetectable until the violator is only a few feet away.

— **Traffic Monitoring Technologies,** 820 S. Friendswood Dr., Suite 204, Friendswood, TX 77546.

HEATED WIPERS

Northland Engineered Products, Inc., Westboro, Mass., has introduced a line of heated windshield wipers for class 6, 7, and 8 trucks. The wipers are wired directly into the ignition system for immediate de-icing while the vehicle warms up.

Rather than thermostats or external devices, these wipers have built-in etched foil heating elements over the entire blade that maintain a minimum of 50°F at −60°F to +100°F.

The Northland Heated Windshield Wipers are available in 13-, 14-, 16-, 18-, and 20-inch sizes; come with 6-foot dual-lead wires and an adapter to fit most wiper arms; and are stainless steel with a no-glare black finish. Replaceable blades, available from Nordel, are designed for year-around use.

— **Northland Engineered Products, Inc.,** 190 Turnpike Rd., P.O. Box 1107, Westboro, MA 01581.

CORSAIR FENDER

The Corsair fender, introduced by The Worthington Group, Inc., is aerodynamically designed to control splash and spray. A patented "air scoop" collects and directs airflow across the top of the wheels, behind the rear wheels, and onto the road's surface.

The Corsair's patented design, which can be used on tractors or trailers, improves driver visibility and protects valuable equipment. According to The Worthington Group, tires and brakes operate more efficiently and the appearance of the equipment is enhanced. The Corsair is available in steel, stainless steel, or aluminum. In addition, custom building is available for single or dual wheels and single-, tandem-, or three-axle applications. — **The Worthington Group, Inc.,** P.O. Box 558, Hunt Valley, MD 21030.

NEW DOLLY

The Clayton BackSaver 710 is a dolly designed to save time, reduce labor costs and prevent back injury.

Engineers at Clayton Associates, Inc., designed the BackSaver for mechanics to eliminate muscle strain and back injury often experienced in attempts to remove brake hubs and drums that weigh 250 pounds or more.

The pivot point of the BackSaver is beneath the center of mass, providing balance. One mechanic can maneuver the BackSaver to loosen and remove the hub and drum. Whereas conventional dollies make it almost impossible to apply appropriate leverage, the height of the BackSaver can be adjusted so the drum can be centered with the axle and easily removed from the wheel.

The BackSaver is equipped with 8-inch wheels that glide over rough, uneven shop floors and can be used with spoke or disk wheels, outboard mounted drums, and on heavy-duty vehicles with disc brakes. It can be used with drums with diameters of 15 inches or greater. — **Clayton Associates, Inc.,** Farmingdale, NJ 07727-0589.

FAST-DRYING PAINT

Du Pont Company has developed a new line of chlorinated film-forming resins to replace chlorinated rubber as a binder in traffic and maintenance paints. Through a new process, Du Pont has combined the adhesion, chemical inertness, and barrier properties of chlorine with the improved adhesion and flexibility features of ethylene/vinyl acetate copolymers in the formulation of the "Hypalon" CP 100 series.

Used in traffic paints, they offer shorter drying times; adhesion to asphalt, concrete, and glass beads, which provide enhanced visibility; durability; chemical and yellowing resistance; stability; compatibility with existing products and equipment; and cost-effectiveness compared with conventional paint formulas that use chlorinated rubber. The new resins have passed tests in six states and have already been named in some paint formula specifications. — **Du Pont,** Chemicals and Pigments Department, Wilmington, DE 19898.

The Fleet's In

SEPTEMBER

Motor Fleet Safety Supervision — "Motor Fleet Safety for Supervisors," Sept. 11-13, Penn State University. — Motor Fleet Supervisor Training, Office of Executive Director, A364 Engrg. Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

Principles of Fleet Administration Safety — Sept. 24-26, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8405.

Motor Fleet Maintenance Supervision — "Maintenance of Commercial Vehicles, Phase A," Sept. 25-27, Penn State University. — Motor Fleet Supervisor Training, Office of Executive Director, A364 Engrg. Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

OCTOBER

Motor Fleet Accident Investigation Workshop — Oct. 1-2, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8405.

Motor Fleet Maintenance Supervision — "Maintenance of Commercial Vehicles, Phase B," Oct. 2-4, Michigan State University; "Advanced Maintenance Management," Oct. 16-18, University of Delaware — Motor Fleet Supervisor Training, A364 Engrg. Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

Motor Fleet Safety Supervision — "Motor Fleet Trainers," Oct. 9-11, "Accident Investigation," Oct. 22-24, "Advanced Accident Investigation," Oct. 25-26, Penn State University; "Motor Fleet Safety for Supervisors," Oct. 23-25, Michigan State University — Motor Fleet Supervisor Training, A364 Engrg. Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

National Safety Council Congress And Exposition

78th Annual, Oct. 28-Nov. 2, 1990, Las Vegas, Nev. Sponsored by the National Safety Council.

Congress events are presented Oct. 28-Nov. 2. For more information about the Congress, contact Congress Planning, National Safety Council, 444 N. Michigan Ave., Chicago 60611, or (312) 527-4800.

The exposition will be open Oct. 30-Nov. 1. For more information about the Exposition of Safety and Health Equipment, Devices, and Services, contact Exposition Manager, (same address).

1990 International Congress on Transportation Electronics — "Vehicle Electronics in the 90s," Oct. 15-17, Dearborn, Mich. — Convergence '90, Mone Asensio, SAE, Detroit Branch, 3001 W. Big Beaver Rd., Suite 320, Troy, MI 48084. (313) 649-0420; Fax (313) 649-0425.

1990 SAE Truck & Bus Meeting & Exposition — Oct. 29-Nov. 1, Detroit, Mich. — Alison Frederick, SAE World Headquarters, Dept. 935, 400 Commonwealth Dr., Warrenville, PA 15096. (412) 772-7131.

NOVEMBER

Motor Fleet Maintenance Supervision — "Maintenance of Commercial Vehicles, Phase B," Nov. 6-8, University of Alabama; "Maintenance Management," Nov. 27-29, Michigan State University. — Motor Fleet Supervisor Training, Office of Executive Director, A364 Engrg. Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

DDC-Professional Truck Driver — Nov. 26-28, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8405.

DDC-Coaching the Mature Driver — Nov. 29-30, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8405.

DECEMBER

Motor Fleet Maintenance Supervision — "Maintenance Management," Dec. 4-6, University of Delaware. — Motor Fleet Supervisor Training, Office of Executive Director, A364 Engrg. Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

DDC-Attitudinal Dimensions of Driving — Dec. 4-6, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8405.

DDC-8 — Dec. 10-12, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8405.

DDC-4 — Dec. 13-14, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8405.

JANUARY 1991

Symposium on Work Zone Traffic Control — Jan. 18-19, Orlando, Fla. — Federal Highway Administration, (703) 285-2517; or Bellomo-McGee, Inc., 8330 Boone Blvd., Vienna, VA 22182. (703) 847-3071.

LIBRARY

Catch a Bus

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Accidents

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WASHINGTON WORLD

Highway Safety Symposium

Corridor improvement and pedestrian safety are focuses

BY JIM CASTELLI

ON JUNE 12 through 14, 1990, 250 state, federal, local and private traffic safety experts met at a symposium sponsored by the National Highway Traffic Safety Administration and the Federal Highway Administration (FHWA) to develop short-term highway safety strategies. The FHWA will have an action plan ready by Sept. 1 and will begin implementing it by Oct. 1.

The symposium was designed to identify countermeasures that could be accomplished within two years. The group produced more than 50 recommendations in five major categories:

- Corridor identification and improvement.
- Pedestrian safety.
- Commercial motor vehicle safety.
- Reducing accident severity.
- Improving driver performance and control.

An FHWA source indicates that the agency does not have the resources to begin work on all of the recommendations and that the most likely areas of focus will be corridor improvement and pedestrian safety.

A background paper on corridor improvement distributed at the symposium noted that "Every state has arterial corridors with severe safety problems. Approximately 50 percent of the fatalities and 30 percent of the injuries occur on the arterials."

"Many of these corridors are categorized as free access, high volume facilities with speeds of 40 miles per hour or greater and adjacent commercial strip development," the paper continued. "In many cases, these safety problems cannot be readily resolved by replacing the existing free access highway with an expressway/freeway because of major financial, environmental or social impacts."

The corridor safety program attacks the problem with a comprehensive approach that integrates highway improvements, driver performance, type of vehicle and emergency medical services initiatives.

The background paper described a major corridor improvement program in Pennsylvania that targeted 55 corridors, ranging in length from one to 72 miles. Corridors chosen were considered to have the greatest potential to reduce accidents significantly through the implementation of low-cost safety improvements and were unlikely to undergo major reconstruction or be replaced in the near future.

Pennsylvania officials identified a 14-point plan, including improvements in signs and pavement markings, speed limit reductions, increased local police enforcement, installation of concrete median barriers, placement of anti-skid pavement surfaces and the establishment of sites designated for truck inspections. Other points addressed were as follows:

- Highway initiatives included an analysis of the location of accident clusters and the identification of roadway deficiencies.
- Driver performance initiatives included educational and media campaigns aimed at safe driving and selective law enforcement, including a "safety blitz" involving simultaneous surveillance by several police departments along a given corridor.
- Vehicle initiatives included truck inspections and encouraging motorists to be aware of their vehicle's condition at all times.
- Emergency medical services initiatives included quicker response times and transfer of accident victims to appropriate medical facilities.

Although the Pennsylvania program is still in the early stages of evaluation, a study of one corridor, Route 65 in Allegheny County, found a 22 percent reduction in the total number of accidents, a 67 percent reduction in alcohol-related accidents and a 41 percent reduction in the accident rate.

A background paper on pedestrian safety noted that pedestrian fatalities — approximately 7,000 per year — account for 16 percent of all highway-related deaths. Children aged 5 to 15 years are over-represented in those deaths, and in some major metropolitan areas, pedestrian deaths account for 40 to 50 percent of all traffic fatalities.

The background paper also noted that more than 70 percent of all identified behavioral errors in pedestrian crashes are on the part of the pedestrians. Local jurisdictions have used a variety of approaches to emphasize pedestrian safety — education campaigns, re-timing stoplights to allow longer crossing times, refurbishing pavement markings, installing pedestrian signals, widening crosswalks, increasing the size of pedestrian islands and installing new signs.

Targeted programs have been successful. In New York, pedestrian deaths and severe injuries declined by more than 50 percent 30 months after a program was launched. In Seattle, pedestrian accidents declined from an average of 476 per year from 1974 to 1979 to 430 in 1980.

Supreme Court Gets Tough

Two recent U.S. Supreme Court rulings provide police with increased authority in enforcing laws against drunk driving.

In the first decision, the court ruled 6-3 that police can stop motorists at sobriety checkpoints, indicating that such tactics do not violate privacy rights. The ruling upheld Michigan's sobriety checkpoint program and, by extension, similar programs in most states.

In the second decision, the court ruled 8-1 that police may videotape or record the responses of suspected drunk drivers. It was decided that police were not in violation of a Pennsylvania man's rights when, without warning him of his rights, they recorded his answers to questions regarding his height, weight and eye color.

The lower courts had been split on the question of sobriety checkpoints: some had upheld the use of checkpoints at which all motorists are stopped and checked for signs of intoxication, while others, such as those in Michigan, had barred police from using checkpoints.

"No one can seriously dispute the magnitude of the drunken driving problem or the states' interest in eradicating it," Chief Justice William H. Rehnquist wrote. "Conversely," he continued, "the weight bearing on the other scale — the measure of the intrusion on motorists stopped briefly at sobriety checkpoints — is slight."

Drunk drivers killed approximately 23,000 people nationwide last year. President Bush cited the seriousness of the drunk driving problem and last December asked state and local governments to step up the fight against drunk drivers. "It's as crippling as crack, as random as gang violence, and it's killing more kids than both combined," he said. The federal government is supplying aid to promote the use of sobriety checkpoints.

Joining Chief Justice Rehnquist were justices Byron R. White, Sandra Day O'Connor, Antonin Scalia and Anthony M. Kennedy; Justice Harry A. Blackmun supported the outcome but was not part of Rehnquist's majority opinion, and justices William J. Brennan, Thurgood Marshall and John Paul Stevens dissented.

"I do not dispute the immense social cost caused by drunken drivers, nor do I slight the government's efforts to prevent such tragic losses," Justice Brennan wrote. He added, however, that "In the face of the 'momentary evil' of drunken driving, the court Thursday abdicates its role as the protector of" the fundamental right of individual privacy.

Michigan state police first used sobriety checkpoints, which were modeled after those designed for a program in Maryland, in 1986. At a checkpoint site, police directed all traffic headed in one direction to a roadside area where officers talked to motorists.

If no immediate evidence of intoxication was detected, the motorist was given a traffic safety brochure and allowed to drive away. The average delay was approximately 30 seconds. If signs of intoxication were detected, the driver was directed to another area for further questioning and perhaps a breath test.

Six Michigan legislators filed suit against state police soon after the checkpoint program was initiated, alleging that the checkpoints violated the Fourth Amendment's ban on unreasonable police seizures and searches (*State Police vs. Sitz, 88-1897*).

In the videotaping case, the Supreme Court ordered a state court to consider reinstating the drunk driving conviction of Inocencio Muniz. A police officer in Upper Allen Township, Pa., noticed Muniz's car stopped by the side of the road on Nov. 30, 1986, with the motor running. The officer reported that he smelled alcohol on Muniz's breath and that his eyes were glazed and bloodshot. The officer said that he told Muniz not to drive until he was in a condition to operate the car safely, but Muniz drove off as the officer returned to his patrol car. The patrolman pursued Muniz, ordered him to stop and told him to perform some sobriety tests; Muniz failed all the tests.

The officer then took Muniz to a police station where the motorist was videotaped answering questions about his height, weight, eye color and other personal characteristics. Only after those responses was Muniz read the so-called Miranda warnings about his right to a lawyer and to remain silent.

Muniz, previously convicted of drunk driving, was convicted again and sentenced to 45 days to 23 months in prison. A Pennsylvania appeals court threw out the latter conviction in 1988, a ruling subsequently thrown out by the Supreme Court.

Justice William J. Brennan wrote that the judge who convicted Muniz was entitled to hear the slurred manner of speech in which Muniz responded to the questions. Brennan did concede, however, that police improperly asked Muniz to state the date of his sixth birthday, indicating that Muniz's response to that question amounted to testimony and that Muniz first should have been read the Miranda warnings. Unlike Muniz's responses to the other questions, Brennan continued, his response to the question concerning his sixth birthday was incriminating because of its content and not just because of the delivery.

Four justices — Rehnquist, White, Blackmun and Stevens — indicated that they would permit the question as well. Justice Thurgood Marshall dissented, however, voting to bar Muniz's conviction. The case is *Pennsylvania vs. Muniz, 89-213.*

Poll Addresses War on Drugs

A Media General-Associated Press poll conducted in May 1990 found that Americans have less confidence in President Bush's war on cocaine than they did in September 1989. The poll also revealed that Americans are increasingly concerned about drug abuse in their neighborhoods.

Nearly half the respondents indicated that drugs are a serious problem where they live, a 40 percent increase from last September when President Bush announced his antidrug campaign.

More than 40 percent of the respondents younger than 45 years said that they know a cocaine user.

While most respondents believed the government can reduce drug abuse, 55 percent expected the problem to worsen. In September, just after Bush declared war on drugs, 74 percent of Americans believed the administration was making a serious effort to combat illegal drug use, a figure that decreased to 59 percent in the new survey.

At the same time, 18 percent responded that the problem of drug abuse is "very serious" in their own neighborhoods — up from 14 percent in September — and 30 percent said it was "somewhat serious," up from 26 percent in September.

Despite concerns, the poll revealed a sharp decline in the number of Americans who cited drug abuse as the nation's greatest problem, a decrease from 61 percent after Bush's speech to 24 percent. This gauge is one of the most sensitive to publicity, however, and Bush's remarks capped a summerlong media focus on the drug crisis. Although it fell sharply in the new survey, drug abuse remained the most often cited problem facing the country, followed by the federal deficit, named by 15 percent.

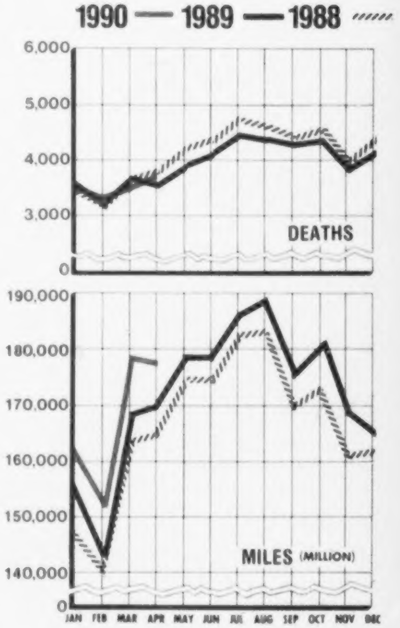
April Traffic Deaths Up 2%

BY MARY E. JOHNSTON and URSULA ZUEHLKE

TRAFFIC SUMMARY

Month	Deaths 1990	Deaths 1989	Change
April	3,620	3,540	+ 2%
4 months	13,830	13,840	– *%
12 months (Ending April, 1990)	46,990	48,860	– 4%

*Less than 0.5%



Motor-vehicle deaths in April totaled 3,620, an increase of 2 percent from the April 1989 total of 3,540.

Deaths for the four-month period ending April totaled 13,830, a decrease of less than 0.5 percent from the 1989 four-month total of 13,840.

Disabling injuries for 1990 are estimated to be almost 500,000. These are injuries resulting in disability beyond the day of the accident, and do not include minor injuries, which probably totaled as many more.

The cost of motor-vehicle accidents for 1990 is estimated at almost $20 billion.

Based on preliminary vehicle mileage reports for this year, the estimated mileage death rate for the entire year is 2.3 (deaths per 100 million vehicle miles).

State Experience

Among the 47 states reporting April experience, 24 states had fewer deaths than in the preceding April, and 22 states showed increases in deaths. One state and the District of Columbia showed no change in the number of fatalities. For the four-month period, 26 states and the District of Columbia showed decreases in the number of deaths, while 20 states showed increases. One state recorded the same number of deaths both years.

Nebraska	–35%
New Hampshire	–35%
Vermont	–31%
Maine	–26%
West Virginia	–24%
New Mexico	–21%
Arkansas	–17%
Massachusetts	–17%
Arizona	–13%
Ohio	–11%
Rhode Island	–11%
California	– 9%
North Carolina	– 9%
Michigan	– 8%
South Dakota	– 8%
Wyoming	– 8%
Colorado	– 6%
Florida	– 6%
Illinois	– 6%
South Carolina	– 6%
Mississippi	– 4%
New Jersey	– 2%
New York	– 1%
Tennessee	– 1%
Texas	– 1%
Wisconsin	– 1%

State Traffic Deaths

Deaths are reported by state traffic authorities. All figures are preliminary. To ensure proper comparisons, 1988 and 1989 figures cover the same reporting period as those for 1990.

Population Rate: U.S. population rate and state population rates are the estimated annual number of deaths per 100,000 population. U.S. population rate is based on July 1, 1990, population estimate; state population rates are based on July 1, 1989, population estimates, U.S. Bureau of the Census, Washington, D.C.

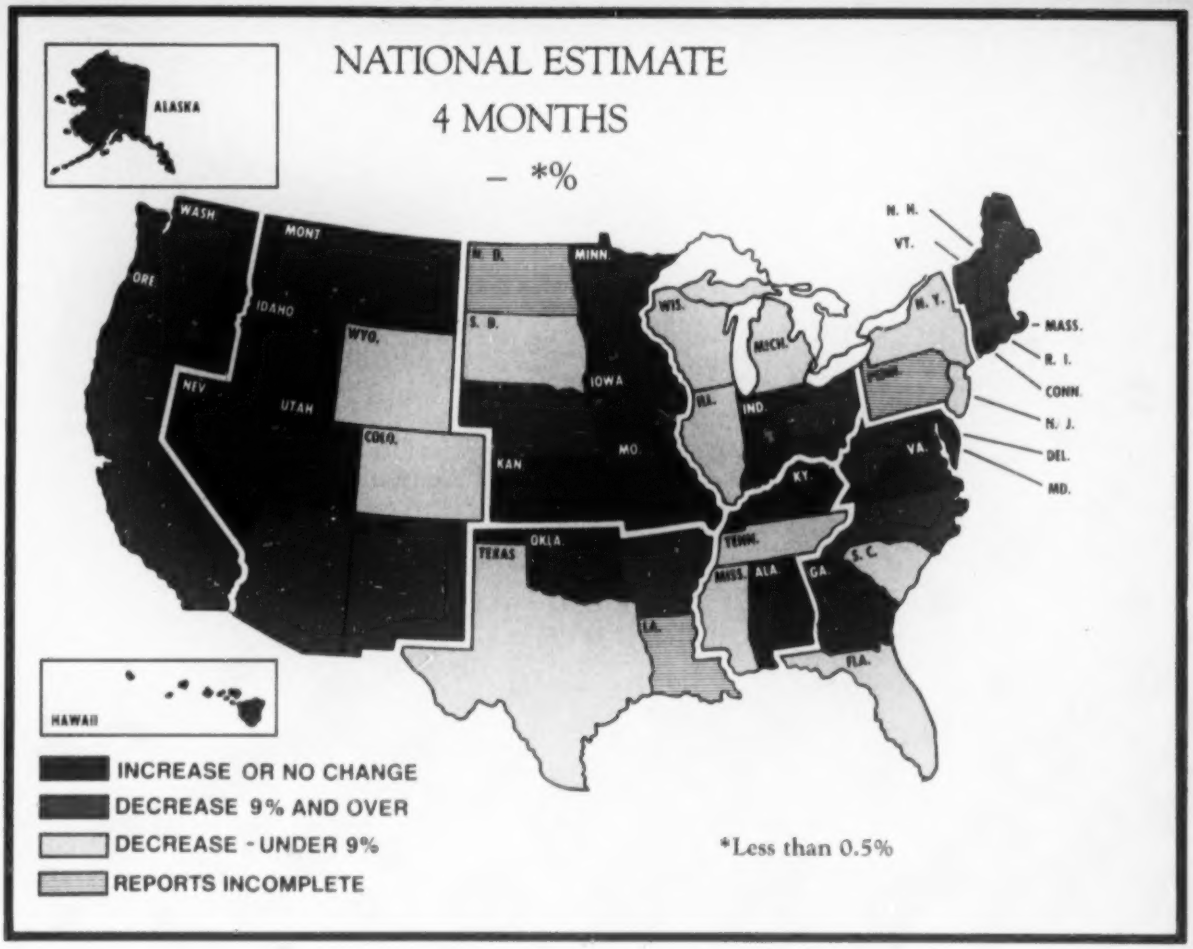
States shown in CAPS had fewer deaths in 1990 than they did in 1989 for the same reporting period.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

		DEATHS IDENTICAL PERIODS			PERCENT CHANGES			
STATE	NO. OF MOS.	1990	1989	1988	1989 TO 1990	1988 TO 1990	1990 POP. RATE	1990 MILE. RATE
Total U.S.	**4**	**13,830**	**13,840**	**13,880**	**- *%**	**- *%**	**18.7**	**2.3**
Alabama	4	331	297	300	+ 11%	+ 10%	24.1	2.2
Alaska	4	27	17	22	+ 59%	+ 23%	15.4	2.3
ARIZONA	4	237	272	239	- 13%	- 1%	20.0	2.1
ARKANSAS	4	139	168	157	- 17%	- 11%	17.3	2.1
CALIFORNIA	4	1,389	1,534	1,490	- 9%	- 7%	14.3	1.6
COLORADO	4	119	127	146	- 6%	- 18%	10.8	1.4
Connecticut	4	120	115	122	+ 4%	- 2%	11.1	1.4
Delaware	4	52	35	61	+ 49%	- 15%	23.2	2.4
D. OF C.	4	13	31	15	- 58%	- 13%	6.5	1.2
FLORIDA	4	1,018	1,081	1,030	- 6%	- 1%	24.1	2.9
Georgia	4	485	464	491	+ 5%	- 1%	22.6	2.2
Hawaii	4	46	46	47	0%	- 2%	12.4	1.7
Idaho	4	55	42	49	+ 31%	+ 12%	16.3	1.9
ILLINOIS	4	445	474	469	- 6%	- 5%	11.5	1.7
Indiana	4	278	263	294	+ 6%	- 5%	14.9	1.6
Iowa	4	129	128	133	+ 1%	- 3%	13.6	1.7
Kansas	4	138	118	124	+ 17%	+ 11%	16.5	2.0
Kentucky	4	268	239	235	+ 12%	+ 14%	21.6	2.4
Louisiana	2	125	95	105	+ 32%	+ 19%	17.1	2.1
MAINE	4	49	66	63	- 26%	- 22%	12.0	1.3
Maryland	4	217	212	233	+ 2%	- 7%	13.9	1.7
MASSACHUSETTS	4	176	212	153	- 17%	+ 15%	8.9	1.3
MICHIGAN	4	384	419	429	- 8%	- 10%	12.4	1.5
Minnesota	4	130	126	138	+ 3%	- 6%	9.0	1.0
MISSISSIPPI	4	212	221	204	- 4%	+ 4%	24.3	2.9
Missouri	4	289	272	300	+ 6%	- 4%	16.8	1.9
Montana	4	52	41	50	+ 27%	+ 4%	19.4	2.0
NEBRASKA	4	55	85	68	- 35%	- 19%	10.2	1.2
Nevada	4	100	65	75	+ 54%	+ 33%	27.0	3.1
NEW HAMPSHIRE	4	36	55	34	- 35%	+ 6%	9.8	1.1
NEW JERSEY	4	282	289	301	- 2%	- 6%	10.9	1.4
NEW MEXICO	4	128	162	121	- 21%	+ 6%	25.1	2.5
NEW YORK	4	567	574	506	- 1%	+ 12%	9.5	1.6
NORTH CAROLINA	4	386	424	428	- 9%	- 10%	17.6	2.0
North Dakota	2	10	4	10	+ 150%	0%	9.1	1.1
OHIO	4	395	443	452	- 11%	- 13%	10.9	1.4
Oklahoma	4	192	177	153	+ 8%	+ 25%	17.9	1.8
Oregon	4	165	155	178	+ 6%	- 7%	17.6	2.0
Pennsylvania	2	244	249	207	- 2%	+ 18%	12.2	1.8
RHODE ISLAND	4	32	36	41	- 11%	- 22%	9.6	1.7
SOUTH CAROLINA	4	312	332	298	- 6%	+ 5%	26.7	3.1
SOUTH DAKOTA	4	35	38	33	- 8%	+ 6%	14.7	1.6
TENNESSEE	4	322	326	348	- 1%	- 7%	19.6	2.0
TEXAS	4	956	968	975	- 1%	- 2%	16.9	1.9
Utah	4	79	57	64	+ 39%	+ 23%	13.9	1.9
VERMONT	4	25	36	30	- 31%	- 17%	13.2	1.3
Virginia	4	324	273	274	+ 19%	+ 18%	15.9	1.6
Washington	4	227	133	204	+ 71%	+ 11%	14.3	1.5
WEST VIRGINIA	4	119	156	146	- 24%	- 18%	19.2	2.4
WISCONSIN	4	189	191	178	- 1%	+ 6%	11.6	1.4
WYOMING	4	23	25	32	- 8%	- 28%	14.5	1.3
Puerto Rico#	2	86	103	114	- 17%	- 25%	18.9	—
Virgin Islands#	4	7	4	7	+ 75%	0%	37.8	—
— CANADIAN PROVINCES —								
Alberta	4	117	104	115	+ 13%	+ 2%	22.2	—
British Columbia	4	170	143	161	+ 19%	+ 6%	24.1	—

#Not included in the TOTAL U.S. death count or rates.

*Less than 0.5%.


NATIONAL ESTIMATE
4 MONTHS
– *%
ALASKA
WASH
ORE
MONT
IDAHO
WYO.
NEV
UTAH
COLO.
N. D.
S. D.
MINN.
IOWA
KAN
MO.
OKLA
TEXAS
LA.
WIS.
MICH.
ILL.
IND.
KY.
TENN.
MISS.
ALA.
GA.
S. C.
FLA.
VA.
PENN.
N. Y.
N. H.
VT.
MASS.
R. I.
CONN.
N. J.
DEL.
MD.
HAWAII
INCREASE OR NO CHANGE
DECREASE 9% AND OVER
DECREASE - UNDER 9%
REPORTS INCOMPLETE
*Less than 0.5%

MOTOR-VEHICLE DEATHS AND CHANGES TOTAL U.S.

	Deaths				Percentage Changes				
					Corresponding Month			4 Months Moving Avg. +	
Months	1987	1988	1989	1990	1988-1990	1988-1989	1989-1990	1988-1989	1989-1990
January	3,301	3,390	3,530	3,480	+ 3%		– 1%		– 4%
February	2,997	3,130	3,150	3,290	+ 5%		+ 4%		– 3%
March	3,517	3,600	3,620	3,440	– 4%		– 5%		– 3%
April	3,621	3,760	3,540	3,620	– 4%		+ 2%		– *%
4 Months	13,436	13,880	13,840	13,830	– *%		– *%		
May	4,264	4,210	3,860			– 8%		– 4%	
June	4,279	4,320	4,080			– 6%		– 5%	
July	4,472	4,720	4,440			– 6%		– 6%	
August	4,815	4,550	4,330			– 5%		– 6%	
September	4,300	4,370	4,250			– 3%		– 5%	
October	4,535	4,520	4,330			– 4%		– 4%	
November	4,169	3,980	3,790			– 5%		– 4%	
December	4,020	4,350	4,080			– 6%		– 5%	
TOTAL	48,290	48,900	47,000	46,990 ‡		– 4%			

The 1987 figures are from the National Center for Health Statistics. The 1988, 1989 and 1990 figures are National Safety Council estimates.

+Four Months Moving Average is based on changes between the totals for four months instead of one month. For example, the April figure shows the change between the totals for January 1989 - April 1989 and January 1990 - April 1990, etc. Adding several months together tends to smooth out single-month changes which may be affected by differences in the number of weekends in a month from one year to the next, random variations, etc.

‡ Deaths for the 12-month period ending April 1990.

*Less than 0.5%.

ADVANCE PROGRAM
National Safety Council Congress

OPENING SESSION

Monday, October 29 **8:00-10:00 AM**

- Annual Business Meeting
- **Keynote Address: The Honorable Elizabeth Dole, Secretary, U.S. Department of Labor**
- Exciting, state-of-the-art multi-media audio-visual presentation

KEYNOTE SESSIONS

In addition to the Opening Session, the 1990 Congress will feature major keynote addresses on Tuesday and Wednesday of Congress week. The schedule at this time is as follows:

Tuesday, October 30	8:30-10:00 AM	**Dr. William J. Bennett** National Drug Policy Director *(Invited)*
Wednesday, October 31	8:30-10:00 AM	**Gerard F. Scannell** Assistant Secretary of Labor, OSHA

BLOCKBUSTERS

MONDAY, OCTOBER 29 10:15-11:45 AM

SESSION 6 OCCUPATIONAL SAFETY AND HEALTH PRIORITIES IN THE 1990S

Program Developer: **CEMENT, QUARRY, AND MINERAL AGGREGATES SECTION**

Co-Sponsored By: **Industrial Division, Labor Division, Motor Transportation Division**

We have observed both MSHA and OSHA responding to safety and health concerns through the 1980s and we expect this response to continue into the 1990s as new safety and health demands become apparent. The speakers will offer insight into their agencies' safety and health priorities as we enter a new decade.

Moderator: Irv Etter, Senior Vice President, National Safety Council, Chicago, IL

10:15 AM **MSHA PRIORITIES - '90s**

William Tattersall, Assistant Secretary of Labor, MSHA, Arlington, VA

11:00 AM **OSHA PRIORITIES - '90s**

Gerard F. Scannell, Assistant Secretary of Labor, OSHA, Washington, DC

SESSION 9 THE NEW NATIONAL TRANSPORTATION POLICY

Program Developer: **HIGHWAY TRAFFIC SAFETY DIVISION**

Co-Sponsored By: **International Air Transport Section, Marine Section, Public Employee Section, Railroad Section**

U.S. DOT Secretary Skinner has initiated a new National Transportation Policy which will affect all modes of transportation--rail, air transport, marine, highways, for decades into the future. Safety and health issues are integrated into all aspects of this new policy. "MOVING AMERICA. NEW DIRECTIONS. NEW OPPORTUNITIES" addresses: maintenance and expansion of the nation's transportation system; fostering a sound financial base for transportation; keeping it competitive; ensuring that it supports public safety and national security; protecting the environment and the quality of life; and advancing U.S. transportation technology and expertise. NHTSA has a new initiative called NETS: Network of Employees for Traffic Safety which is a new cooperative employer program. Learn how your company can use the NETS concept for the reduction of motor vehicle crashes by your employees.

Moderator: Dr. Noel C. Bufe, Director, Traffic Institute, Northwestern University, Evanston, IL

10:15 AM **STRATEGIES FOR ACTION**

Galen J. Reser, Assistant Secretary for Governmental Affairs, U.S. Department of Transportation, Washington, DC

10:45 AM **NETS: NETWORK OF EMPLOYERS FOR TRAFFIC SAFETY-- SUPPORTING THE NATIONAL TRANSPORTATION POICY**

Adele Derby, Associate Administrator for Traffic Safety Programs, National Highway Traffic Safety Administration, Washington, DC

TUESDAY, OCTOBER 30 10:15-11:45 AM

SESSION 74 ENVIRONMENTAL, SAFETY AND HEALTH PROGRAMS ARE GOOD BUSINESS: A MANAGEMENT PERSPECTIVE

Program Developer: **CHEMICAL SECTION**

Co-Sponsored By: **Fertilizer and Agricultural Chemicals Section, Rubber and Plastics Section**

There are many companies with effective, ongoing, ES&H programs. These companies recognize that integrating such synergistic programs is very good business. Integration of these programs has lead to improved results, with the total being greater than the sum of the parts. Learn how to develop and integrate such programs into your organization. See what other companies have done and achieved!

Moderator: J.T. "Pete" Blackmon, Senior Engineer, International Technology Corporation, Nuclear Sciences Division, Knoxville, TN

John A. Auxier, Ph.D., CHP, Corporate Director, Nuclear Sciences, International Technology Inc., Knoxville, TN

Fred R. Mynatt, Ph.D., Vice President, Martin Marietta Energy Systems, Oak Ridge, TN

Donald McFee, Ph.D., CIH, Vice President, Occusafe Inc., Wheeling, IL

SESSION 75 WHAT TO CONSIDER BEFORE OFFERING CHILD CARE AS AN EMPLOYEE BENEFIT

Program Developer: **EDUCATIONAL RESOURCES DIVISION**

Co-Sponsored By: **Community Service Division**

A fast-paced, practical overview session for employers. Will open with a summary of research showing positive correlations between corporate sponsored child care and employee productivity. Next, an overview of environmental considerations especially in regard to loss control/risk management -- going beyond employee training to types of physical modifications that should be built into your center. Next, two speakers will discuss very important, specific risk management issues germane to child care centers -- the prevention of possible child abuse by the center's employees and children's motor vehicle transportation issues.

10:15 AM **RESEARCH SHOWS THAT CORPORATE-SPONSORED DAY CARE IMPROVES PRODUCTIVITY**

Sandra Burud, President, Burud & Associates, Inc., Child Care Benefits Consultants, Pasadena, CA

10:35 AM **ENVIRONMENTAL CONSIDERATIONS IN YOUR CENTER'S RISK MANAGEMENT PROGRAM**

Barbara Carlson, President, Safe Space Concepts, Inc., Houston, TX

10:55 AM **DESIGN AND REMODELING CONSIDERATIONS IN REGARD TO SAFETY AND THE PREVENTION OF CHILD ABUSE**

David L. Fender, Office of Systems Management, U.S. Army Safety Center, Ft. Rucker, AL

11:15 AM **TRANSPORTATION SAFETY CONCERNS--CHILD SAFETY SEATS, DROP-OFF/PICK-UP AREAS & MORE**

Rita S. Weiss, Program Analyst, Office of Occupant Protection, U.S. DOT/NHTSA-11, Washington, DC

SESSION 76 IMPLEMENTATION OF CDL

Program Developer: **MOTOR TRANSPORTAION DIVISION**

Co-Sponsored By: **Commercial Vehicle Section, Fleet Administrator Section, School Transportation Section, Transit Section**

Under federal standards issued by the Federal Highway Administration, drivers will have to obtain a Commercial Driver's License (CDL) in their state of domicile. The majority of states plan to begin conducting written and driving tests for CDL during 1990. Delegates will learn the latest information on challenges encountered from various state representatives involved in early implementation. The information presented will provide delegates a better perspective of how they can successfully implement their own CDL training programs.

Moderator: Stephen J. Zeigle, Fleet Safety Consultant, AIG Consultants, Inc., Chicago, IL

10:15 AM **IMPLEMENTATION OF CDL - A FEDERAL OVERVIEW**

Jill Hochman, Office of Motor Carrier Standards, Federal Highway Administration, Washington, DC

11:00 AM **IMPLEMENTATION - RESULTS & WHAT YOU CAN EXPECT**

Carole Waggoner, Chief, Program & Policy Administration, California Department of Motor Vehicles, Sacramento, CA

WEDNESDAY, OCTOBER 31 10:15-11:45 AM

SESSION 134 BASIC FLEET ADMINISTRATION SAFETY PROGRAM

Program Developer: **COMMERCIAL VEHICLE SECTION**

OSHA is placing a high priority on basic fleet safety in industry. Motor vehicle accidents are a leading cause of occupational fatalities and injuries. OSHA'S posture on fleet safety and the basic elements of a fleet administrator's safety program will be discussed.

Moderator: Joseph M. Koeberl, Manager, Commercial Vehicle Loss Control, Reliance National, New York, NY

Gerard F. Scannell, Assistant Secretary of Labor, OSHA, Washington, DC

William J. Grover, Creative Risk Services, Inc., Berlin, NJ

SPECIALTY PROGRAMS

AGRICULTURAL DIVISION

SESSION 15 INVESTIGATING AGRICULTURAL ACCIDENTS

MONDAY, OCTOBER 29 1:15-2:45 PM

Co-Sponsored By: **National Institute for Farm Safety**

Last year, agricultural accidents claimed the lives of some 1,300 individuals and resulted in approximately 120,000 disabling injuries. Many of these accidents involved factors that are unique to the agricultural workplace. Adequate investigations of these incidents are important because they provide information on causes and contribute to developing effective prevention strategies. The session will offer a clear statement on why accident investigations are needed and a summary of proven accident investigation techniques used by experienced professionals.

Moderator: Dr. William E. Field, Extension Safety Specialist, Purdue University, Department of Agricultural Engineering, West Lafayette, IN

1:15 PM **INTRODUCTION AND OVERVIEW**

Dr. William E. Field, Extension Safety Specialist, Purdue University, Department of Agricultural Engineering, West Lafayette, IN

1:30 PM **THE IMPORTANCE OF AGRICULTURAL ACCIDENT INVESTIGATIONS - AN INSURANCE COMPANY PERSPECTIVE**

Dan Hair, C.S.P., Vice President, Safety and Health, Zenith Insurance Co., Woodland Hills, CA

1:50 PM **INVESTIGATING AGRICULTURAL MACHINERY ACCIDENTS - AN ENGINEERING PERSPECTIVE**

Karl Anderson, Retired Safety Engineer (Deere & Co.), Tucson, AZ

2:10 PM **INVESTIGATING AGRICULTURAL MACHINERY ACCIDENTS - AN EXPERT WITNESS PERSPECTIVE**

William Borghoff, Senior Consultant, Packer Engineering Associates, Inc., Naperville, IL

2:30 PM **QUESTIONS AND DISCUSSION**

CEMENT, QUARRY AND MINERAL AGGREGATES SECTION

SESSION 16 FUTURE TRENDS IN FEDERAL HIGHWAY ADMINISTRATION (FHWA) SAFETY REGULATIONS

MONDAY, OCTOBER 29 1:15-2:45 PM

This session will inform attendees of the recent regulatory activities and future trends of the Federal Highway Administration and how those regulations will affect industries involving transportation, particularly in the area of truck safety. This is an extremely important session for industries regulated by the Department of Transportation.

Moderator: Cheryl Ann Suzio, Safety Coordinator, York Hill Trap Rock, Meriden, CT

Michael F. Trentacoste, Acting Director, Office of Motor Carrier Standards, Federal Highway Administration, Washington, DC

COMMERCIAL VEHICLE SECTION

SESSION 12 MEDIA RELATIONS IN CRISIS SITUATIONS

MONDAY, OCTOBER 29 1:15-4:30 PM

A valuable presentation for your company on developing a program and policy for dissemination of accident-related information to the media, and the legal ramifications of such dissemination.

Moderator: William M. England, Safety & Security Manager, McLane Company, Inc., Temple, TX

1:15 PM **DOT PERSPECTIVE ON MEDIA RELATIONS**

Stanley Hamilton, Office of Program Management, Office of Motor Carrier Safety, Washington, DC

2:00 PM **DEVELOPING A PROGRAM & POLICY FOR DISSEMINATION OF ACCIDENT INFORMATION TO THE MEDIA**

Kenneth A. Thompson, Vice President Safety, Yellow Freight Systems, Inc., Overland Park, KS

2:45 PM HOW TO ESTABLISH PRO-ACTIVE RELATIONS WITH THE MEDIA

Steve Hardymon, Vice President, Media Relations & Environmental Affairs, Chemlawn Services, Inc., Columbus, OH

3:30 PM LEGAL ASPECTS OF NEWS RELEASES

D. James Mackall, Attorney, Calhoun, Gump, Spillman & Stacey, Attorney & Counselors, Dallas, TX

SESSION 81 DRUG TESTING - REGULATIONS & TRAINING

TUESDAY, OCTOBER 30 1:15-4:30 PM

A review of the latest government information on drug testing requirements. In addition, attendees will receive education on drug abuse policy development and training. Special Note: A Certificate of Completion will be provided to each attendee following the presentation.

Moderator: Paul F. Tamburelli, Director of Safety, XTRA Corporation, Chicago, IL

1:15 PM DRUG SCREENING REGULATIONS UPDATE

Thomas P. Koslowski, P.E., Chief, Standards Development Division, Office of Motor Carriers, Washington, DC

2:45 PM DRUG ABUSE - POLICY DEVELOPMENT & TRAINING

Bruce Wilkinson, Workplace Consultants, Inc., Gretna, LA

COMMUNITY SERVICE DIVISION

SESSION 1 EIGHTEENTH ANNUAL CONGRESS NATIONAL CITATION AWARDS BANQUET

SATURDAY, OCTOBER 27 6:30-9:30 PM

The Community Service Division of the National Safety Council, through the Citation Awards Program, publicly recognizes significant safety activities of individuals and community organizations. Awards will be presented to winners at this banquet.

Moderator: Phoebe Solomon, Chairman, Community Service Division, National Safety Council, American Foundation for Vision Awareness, Glencoe, IL

Welcome

T. C. Gilchrest, President, National Safety Council, Chicago, IL. Followed by dinner service.

7:45 PM A COMMUNITY CONCERN: OUR ENVIRONMENT - THINK GLOBALLY, ACT LOCALLY...YOU CAN MAKE A DIFFERENCE!

Robert N. Snelling, Director of Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency, Las Vegas, NV

8:15 PM AWARDS PRESENTATION

Joanne E. Blair, Awards Chairman, Community Service Division, National Safety Council, Division of Traffic Safety, Illinois Department of Transportation, Springfield, IL

SESSION 4 A COMMUNITY CONCERN: MOTORCYCLE HELMETS - USE YOUR HEAD TO SAVE YOUR LIFE

SUNDAY, OCTOBER 28 3:00-4:30 PM

Co-Sponsored By: Educational Resources Division, Highway Traffic Safety Division

Legislation and education are the two main thrusts of the effort to save lives and prevent injury through the use of motorcycle helmets. This panel will discuss the personal and societal consequences of motorcycle head injuries and efforts to legislate mandatory helmet use on a nationwide basis.

Moderator: Carol Ladue, Vice Chairman, Community Service Division, National Safety Council, Assistant Director, Environmental Health and Safety, Virginia Commonwealth University, Richmond, VA

Marilyn Price-Spivak, President, National Head Injury Foundation, South Borough, MA

Honorable John H. Chafee, (R., Rhode Island), United States Senate, Washington, DC

Dr. Elizabeth Orsay, Specialist, Emergency Medicine, Lutheran General Hospital, Park Ridge, IL

Dr. Mervin Langley, Clinical Director, New Medic Rehabilatation Center of Wisconsin, Waterford, WI

DRIVER IMPROVEMENT PROGRAMS

SESSION 21 DDC...IT'S MORE THAN YOU THINK

MONDAY, OCTOBER 29 3:00-4:30 PM

This session will present an in-depth review of the different programs that continue to make DDC "The First Name in Defensive Driving." An overview and synopsis of each course will be presented along with a review of the appropriate audiovisuals. A panel of DDC users will discuss the effectiveness of the program as well as their particular success stories. Also the new FLI Municipal Services program will be introduced. This program deals with the driving needs of law enforcement, emergency medical and highway maintenance vehicles.

Moderator: Paulette Moulos, Manager, Marketing and Administration, National Safety Council, Chicago, IL

SESSION 54 DDC PREPARES YOU FOR CDL

TUESDAY, OCTOBER 30 1:15-2:45 PM

In 1986, Congress passed the Commercial Motor Vehicle Safety Act which requires minimum federal standards for persons who operate commercial motor vehicles. These standards require written and driving tests to determine whether drivers have the necessary skills and knowledge for safe vehicle operation. In less than a year, the National Safety Council has assembled a full spectrum of CDL training courses. Working in conjunction with FLI Learning Systems, Inc., and Buckley Productions, the National Safety Council is now making the following courses available: CDL Prep Course; CDL Written Test Refresher; CDL Skills Training Program; CDL Tests For Waste Services Drivers; CDL Tests For Transit Bus Drivers; CDL Tests For School Bus Drivers;

Moderator: M/Sgt. Charles J. Schwarting, Illinois State Police, Springfield, IL

James A. Solomon, Administrator of Training, National Safety Council, Chicago, IL

SESSION 88 DDC-ADD...A RESPONSE TO AN ATTITUDINAL PROBLEM

MONDAY, OCTOBER 29 1:15-2:45 PM

The Driver Improvement Programs Department is proud to introduce a program for the 1990s, the Defensive Driving Course - Attitudinal Dynamics of Driving (DDC-ADD). DDC-ADD takes a unique approach in applying the principles of Reality Therapy to driving and driver behavior. The course goes beyond basic skills instruction by addressing the attitudes and behaviors of the problem driver. Through interactive exercises, stimulating lectures, state-of-the-art visuals, and thought-provoking discussion, the problem driver will come to understand his or her responsibilities on the road.

Moderator: Jack Smith, Manager, Training Section, Canada Safety Council, Ottawa, Ontario, Canada

Julie Hinton, Managing Director, Safety Council of the Ozarks, Springfield, MO

EDUCATIONAL RESOURCES DIVISION

SESSION 3 HOW TO DEVELOP A COMMUNITY OUTREACH PROGRAM TO TEACH CHILDREN'S SAFETY

SUNDAY, OCTOBER 29 1:15-2:45 PM

"Starting Out Safe" is an adult/parent education program that will be presented during this session. It incoporates both A/V and printed materials and addresses motor vehicle accidents, choking, falls, burns and drowning. Beyond Starting Out Safe program content, you will have the opportunity to learn first-hand from a team of health care professionals who have done it all. Their presentation will include information on program development, implementation, evaluation, professionalization and funding. If you are going to do, or are doing, outreach/community education programming, this session is for you.

Moderator: Leanna Depue, Assistant Professor, Department of Health Education, Southern Illinois University, Carbondale, IL

Dona Lane, R.N., Program Coordinator, Pediatric Intensive Care Unit, Methodist Hospital of Indiana, Inc., Indianapolis, IN

Kathy Mathena, R.N., BSN, Nursing Unit Manager, Pediatric Intensive Care Unit, Marguerite Lilly Noyes Children's Pavilion, Methodist Hospital of Indiana, Inc., Indianapolis, IN

SESSION 22 HOW WOULD I KNOW? -- IS MY DRIVER EDUCATION PROGRAM WORKING

MONDAY, OCTOBER 29 1:15-2:45 PM

With OSHA considering requirements for driver education programming for all employees who drive motor vehicles as part of their jobs, the need to know how to evaluate the success of driver education programming is increasing. Panelists will identify questions to be asked when determining if a fleet driver education program is working. Both qualitative and quantitative approaches will be discussed. Consideration will be given to pre-and post-employment factors which contribute to the success of driver education programs.

Moderator: John Palmer, Ph.D., Department Chair, Health Education & Traffic Safety Department, St. Cloud State University, St., Cloud, MN

Dr. Francis Kenel, Traffic Safety Consultant, American Automobile Association-Potomac, Falls Church, VA

Dr. James Aaron, Driver Performance Consultant, Palm Harbor, FL

Quinton Boroi, Fleet Safety Specialist, Commercial Insurance Group, Erie Insurance Group, Erie, PA

HIGHWAY TRAFFIC SAFETY DIVISION

SESSION 28 PEDESTRIANS AND OLDER DRIVERS

MONDAY, OCTOBER 29 1:15-2:45 PM

This session was developed because of the special safety issues represented by pedestrians and older drivers. Although the mileage death rate for 1989 fell to an all-time low of 2.2 deaths per 100 million vehicle miles of travel, pedestrian fatalities and injuries have remained relatively constant. Each year more than 8,500 pedestrians and another 70,000 are injured as a result of traffic accidents. Another population group of special concern is the older driver. Data indicate that, by the year 2000, the number of drivers above the age of 55 will double. Thus, there is a definite need for improving the transportation system, including driver education, vehicle and highway design. This session will focus on engineering, education and enforcement as means of addressing these special safety issues.

Moderator: Barbara Bailey, President, Ohio Women in Traffic Safety, Canton, OH

1:15 PM COUNTERMEASURES FOR PEDESTRIAN ACCIDENTS

Charles V. Zegeer, Program Manager, Roadway Studies, Highway Safety Research Center, Chapel Hill, NC

1:35 PM PEDESTRIAN EDUCATION - CONCEPTS, TECHNIQUES

David Preusser, Dunlap and Associates East, Inc., Norwalk, CT

1:55 PM OLDER DRIVERS - WHAT ARE THE ISSUES?

Carlton C. Robinson, Executive Vice President, Highway Users Federation, Washington, DC

2:15 PM SOME INTERESTING STATISTICS CONCERNING OLDER DRIVERS

John Eberhard, Research Psychologist, National Highway Traffic Safety Administration, Washington, DC

SESSION 29 WORK ZONE SAFETY

MONDAY, OCTOBER 29 1:15-2:45 PM

Over the past decade there has been a major effort by governmental agencies and the traffic control industry to improve the safety of motorists, pedestrians and workers in work zones. Part VI of the Manual on Uniform Traffic Control Devices is undergoing extensive revision to include the latest advancements in work zone technology. Further, the new Part VI provides additional information for urban areas including utility and emergency operations.

Moderator: Jarvis D. Michie, President, Dynatech Engineering Inc., San Antonio, TX

1:15 PM THE NEW PART VI OF THE MUTCD

Phill Russell, Chief, Traffic Control Branch, Office of Traffic Operations, Federal Highway Administration, Washington, DC

1:35 PM CURRENT RESEARCH IN WORK ZONE TRAFFIC CONTROL

Howard H. Bissell, Office of Research and Development, Federal Highway Administration, Washington, DC

1:55 PM INNOVATIVE WAYS TO PROTECT WORKERS IN WORK ZONES

James Migletz, Vice President, Graham-Migletz Enterprises, Inc., Independence, MO

2:15 PM WORK ZONE TRAINING AND CERTIFICATION

Victor Liebe, Director of Education, American Traffic Safety Services Association, Inc., Fredericksburg, VA

SESSION 94 TORT LIABILITY AND RISK MANAGEMENT

TUESDAY, OCTOBER 30 1:15-2:45 PM

SESSION 95 OSHA: PROPOSED REQUIREMENTS FOR OCCUPANT RESTRAINT USAGE AND DRIVER TRAINING

TUESDAY, OCTOBER 30 1:15-2:45 PM

OSHA has proposed a rule calling for employers to develop and implement a program of safety belt usage by employees. Programs are currently available for adoption by industry. Learn how your company can utilize the NETS concept for the reduction of motor vehicle crashes by your employees.

Moderator: Tom Reel, Executive Director, Traffic Safety Association of Michigan, Lansing, MI

Michael Moore, Fire Protection Engineer, U.S. Department of Labor, OSHA, Washington DC

SESSION 118 DRUGS IN THE WORKPLACE: OCCUPATIONAL HAZARD?--- LESSONS FROM TRANSPORTATION SAFETY

TUESDAY, OCTOBER 30 3:00-4:30 PM

Co-Sponsored By: Committee on Alcohol and Other Drugs

The use of controlled substances and alcohol in the workplace is a topic of much interest in these times. The Transportation industry, in both the U.S. and Canada, has had valuable experience in on-the-job testing for drugs and alcohol and will share these experiences with other industries in this session. Another question to be addressed is that of drug use vs. drug impairment. Degrees of impairment from the use of various controlled substances have not been readily defined in the past.

Moderator: J. Robert Zettl, Chief, Alcohol Test Program, Colorado Department of Health, Denver, CO

3:00 PM POLICY ISSUES AND RECOMMENDATIONS FROM THE NATIONAL TRANSPORTATION SAFETY BOARD

James B. Kolstad, Chairman, National Transportation Safety Board, Washington, DC

3:20 PM DRUGS AND TRANSPORTATION IN CANADA

Herbert M. Simpson, Ph.D., Executive Director, Traffic Injury Research Foundation, Ottawa, Ontario, Canada

3:40 PM DRUG USE VS. DRUG IMPAIRMENT

Alan C. Donelson, Ph.D., Managing Scientist, Failure Analysis Associates Inc., Palo Alto, CA

4:00 PM QUESTIONS AND ANSWERS

SESSION 119 INNOVATIONS IN TRAFFIC RECORDS TECHNOLOGY

TUESDAY, OCTOBER 30 3:00-4:30 PM

Co-Sponsord By: Traffic Records Committee

Acknowledging that we contain but do not eradicate highway safety problems, and that a dynamic society continually creates new challenges to safety, it becomes obvious that traffic records systems must evolve in response to new demands. As an essential support service for all other safety programs, traffic records should be recognized, nurtured and given its proper share of resources. Although traffic records systems periodically require a major overhaul at some expense, many worthy system improvements could be accomplished with small to moderate funding levels. This session will focus on a few specific programs that are viewed as state-of-the-art solutions to current complex problems.

Moderator: Clayton E. Hatch, Director, National Driver Register, National Highway Traffic Safety Administration, Washington, DC

3:00 PM AUTOMATED CITATION SYSTEM

Don Hinton, Chief, Planning and Analysis Division, California Highway Patrol, Sacramento, CA

3:20 PM CRITICAL DATA NEEDS

Mark Edwards, Ph.D., Chief, Mathematical Analysis Division, National Highway Traffic Safety Administration, Washington, DC

3:40 PM CLIPBOARD COMPUTER FOR DATA COLLECTION AND TRANSMISSION

C. Thomas Savell, Ph.D., President, Dynamic Analysis & Testing Associates, Carlsbad, CA

BIOMETRIC IDENTIFICATION SYSTEMS FOR DRIVER LICENSING

John C. MacGowan, Chief, Motor Carrier Information Division, Office of Motor Carrier Information Management, Federal Highway Administration, Washington, DC

PUBLIC SAFETY DIVISION

SESSION 41 WATER RESCUE FOR PUBLIC SAFETY PERSONNEL

MONDAY, OCTOBER 29 1:15-2:45 PM

Co-Sponsored By: Public Employee Section

Water rescues and the retrieval of trapped or stranded victims are among the most difficult operations faced by emergency personnel throughout the country. All too often, such attempts end not only in failure, but also result in the death or injury of rescue personnel. This program will examine how well-planned, well-coordinated rescues can be developed.

Moderator: Judith Grzegorski, Safety and Security Manager, Milwaukee Metro Sewage District, Milwaukee, WI

Virgil H. Chambers, Chief, Boating Safety Education, Pennsylvania Fish Commission, Bureau of Boating, Harrisburg, PA

Emily King, Special Program Administrator, Ohio Department of Natural Resources, Division of Watercraft, Columbus, OH

SESSION 157 BICYCLES - HELMETS AND VISIBILITY SAFETY

WEDNESDAY, OCTOBER 31 1:15-2:45 PM

Co-Sponsored By: Youth Activities Division

High tech has invaded the bicycle as thousands of adults are rediscovering the bike as a fun and fit way to spend leisure time with their families. The session will cover accident prevention, helmets, bicycling emergency skills, making riders more visible to motorists and tips for safe family fun.

Moderator: Mike Caven, Publications Consultant, Outdoor Empire Publishing, Seattle, WA

RAILROAD SECTION

SESSION 42A SALARY/WAGE CONTINUATION AND ITS ROLE IN F.E.L.A. CASES

MONDAY, OCTOBER 29 1:15-2:45 PM

Three railroads explain their programs and how wage continuation relates to attitude; reduced or increased los work days and contributions to the overall safety process.

Moderator: J.E. (Ed) Codd, Assistant Vice President, Risk Management, CSX Transportation, Jacksonville, FL

Debbie Marr, Manager of Wage Continuation, Union Pacific Railroad, Omaha, NE

Pat Wallace, Manager of Wage Continuation, Southern Pacific Railroad, San Francisco, CA

T. Steve Brown, Director of Safety Rules, Port Terminal Railroad Association, Houston, TX

SESSION 66A CROSSING SAFETY-THREE 'E'S: EDUCATION, ENGINEERING AND ENFORCEMENT

MONDAY, OCTOBER 29 3:00-4:30 PM

This session will present how three railroads handle crossing safety By: committee/public education; law enforcement seminars; engineering changes, reduction of exposure, upgrading and closing crossing.

Moderator: Phil Juneau, Assistant Director of Accident Prevention, Canadian Pacific Railroad, Montreal, Quebec, Canada

Allen Hill, Manager of Safety Services, Union Pacific Railroad, Los Angeles, CA

Glen Hunsucker, Superintendent of Police Communication Center, Atchison, Topeka and Santa Fe Railroad, Topeka, KS

Ronald J. Morris, Assistant Superintendent of Safety, Kansas City Southern Railway Company, Shreveport, LA

SCHOOL TRANSPORTATION SECTION

SESSION 45 LIABILITY FOR FAILING TO ADEQUATELY TRAIN SCHOOL BUS DRIVERS

MONDAY, OCTOBER 29 1:15-2:45 PM

Covered in this session will be what is involved in doing a thorough training program, including the correct documentation for future reference.

Moderator: Bill G. Loshbough, Vice President, Human Resources, Durham Transportation, Rosemead, CA

Richard E. Fischer, Transportation Specialist, Trans-Consult, Mt. Pleasant, SC

Jack Burkert, Senior Vice President, Lancer Insurance Company, Long Beach, NY

SESSION 84 SPECIAL EDUCATION DRIVER TRAINING

TUESDAY, OCTOBER 30 1:15-4:30 PM

This session will cover caring for special exceptionalities, the growth of the medically fragile population and the liabilities of special education.

Moderator: Mary Helen Campbell, Curriculum & Training Specialist for Alternative Transportation, Albuquerque Public Schools, Albuquerque, NM

Richard F. Wenzel, Assistant Director, Division of Transportation Services, Milwaukee Public Schools, Milwaukee, WI

Steve J. Lovett, Director of Training Development, Wheels-2-Go, Incorporated, Rahway, NJ

SESSION 162 INNOVATIVE WAYS OF RIDERSHIP MANAGEMENT

WEDNESDAY, OCTOBER 31 1:15-2:45 PM

Covered in this session will be techniques taught to the drivers in ways of handling student discipline and incentives for behaving on a school bus, as well as disciplinary action necessary if students misbehave on a school bus.

Moderator: Lynn N. Degenhart, General Manager, Helweg & Farmer Transportation, Las Cruces, NM

Nancy Schulz, Division Safety Manager, Mayflower Contract Services, Kansas City, MO

TRANSIT SECTION

SESSION 48 MANDATORY DRUG TEST UPDATE

MONDAY, OCTOBER 29 1:15-2:45 PM

This is a two-part program covering operator drug testing. The first presentation will contain information from the Urban Mass Transit Administration. The second portion of the program will present information from the field.

Moderator: Jerry Burke, Safety Specialist, Transportation Division, Clarendon National Insurance Company, Bloomsburg, PA

James Chappas, Director of Safety, Training & Recruitment, Liberty Lines, Yonkers, NY

Thomas J. Rabe, Director of Safety, Greater Cleveland Regional Transit Authority, Cleveland, OH

Andrew D. Turner, Manager of Safety & Training, Pinellas Suncoast Transit Authority, Clearwater, FL

Roland Widman, Manager of Safety, Regional Transit Service, Inc., Rochester, NY

SESSION 70 MASS TRANSIT'S ROLE IN DISASTER PLANNING

MONDAY, OCTOBER 29 3:00-4:30 PM

Recent natural disasters have made it very apparent that every transit property needs to prepare and plan for such events. This program will explain how an effective plan can be prepared, and how transit operators can learn from the experiences of those who have dealt with disasters.

Moderator: Thomas D. Boyle, Manager, System Safety, Chicago Transit Authority, Chicago, IL

Richard S. Breeden, Safety & Training Instructor, OMNITRANS, San Bernardino, CA

Albert W. Hartkorn, Supervisor, System Safety, Metro Dade Transit Agency, Miami, FL

Doug Hartmann, BC Transit, Vancouver, British Columbia, Canada

SESSION 110 VANDALISM/OPERATOR SAFETY & SECURITY

TUESDAY, OCTOBER 30 1:15-2:45 PM

This session will review methods and procedures used by various transit properties to reduce vandalism on transit coaches and bus shelters. Types of security methods offered bus operators and the general public will be discussed.

Moderator: C.E. Switzer, Senior Supervisor of Safety - Security, Protective Services Division, Transportation Department, The City of Calgary, Calgary, Alberta, Canada

John J. Honan, Superintendent of Safety, Toronto Transit Commission, Toronto, Ontario, Canada

Wayne Huston, Supervisor of Transit Training, Metro Transit, Seattle, WA

Wayne McKinnon, Occupational Health and Safety Officer, Ottawa-Carleton Regional Transit Commission, Ottawa, Ontario, Canada

Carol L. Perkins, Industrial Safety Administrator, Central Ohio Transit Authority, Columbus, OH

SESSION 132 INDUSTRIAL HYGIENE CONCERNS IN BUS AND RAIL SHOPS

TUESDAY, OCTOBER 30 3:00-4:30 PM

The role of the industrial hygienist in the ever-changing area of transit safety will be discussed. Examples of problems and their solutions will be explained by several transit properties who are familiar with bus and rail maintenance facilities.

Moderator: Charles F. McCoubrey, Industrial Safety Officer, Mass Transit Administration, Baltimore, MD

James M. Dougherty, Industrial Safety Specialist, Greater Cleveland Regional Transit Authority, Cleveland, OH

James Gigantino, Manager, Safety Activities, New Jersey Transit Bus Operations Inc., Maplewood, NJ

Santo S. Radice, Brooklyn, NY

Steve J. Tima, Jr. Assistant Manager, Safety & Accident Prevention, Port Authority of Allegheny County, Pittsburgh, PA

SESSION 163 STRUCTURE/ROLE OF A SAFETY COMMITTEE

WEDNESDAY, OCTOBER 31 1:15-2:45 PM

Comparisons by several transit properties on the structure and various personnel involved with their safety committees. The interaction of members, as well as the overall effectiveness of the safety committee, will be discussed by each representative.

Moderator: Joseph F. Boscia, Director of Human Resources Development, New Jersey Transit Bus Operations Inc., Maplewood, NJ

Robert T. Cox, Director of Safety, Phoenix Transit System, Phoenix, AZ

Judy A. Martin, Industrial Safety Specialist, Risk Management Department, Cincinnati, OH

Gary E. Sutton, Safety Specialist, SEPTA, Philadelphia, PA

SESSION 173 COMPUTER APPLICATIONS IN TRANSIT SAFETY

WEDNESDAY, OCTOBER 31 3:00-4:30 PM

Various computer systems, programs and packages will be discussed as they specifically relate to the transit industry. Conclusions on efficiency and effectiveness will be discussed as well as comparisons of several transit properties.

Moderator: Frederick L. Mead, Director, System Safety Analysis/Performance, Chicago Transit Authority, Chicago, IL

James Gigantino, Manager, Safety Activities, New Jersey Transit Bus Operations, Inc., Maplewood, NJ

John J. Honan, Superintendent of Safety, Toronto Transit Commission, Toronto, Ontario, Canada

David Sproule, Safety and Training Manager, B.C. Rapid Transit Company Ltd., Burnaby, British Columbia, Canada

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PROFESSIONAL DEVELOPMENT SEMINARS

THURSDAY, NOVEMBER 1 9:00 AM-4:00 PM

FRIDAY, NOVEMBER 2 9:00 AM-4:00 PM

SESSION 191 A & B HAZARDOUS MATERIALS TRANSPORTATION SEMINAR

International and federal law requires training for anyone involved in the manufacture, transportation or packaging of hazardous materials/dangerous goods. This seminar will help you comply with these regulations. Transporting hazardous materials/dangerous goods is regulated in detail not only by the United States, but also by foreign governments. In this country, the Department of Transportation administers the hazardous materials regulations through the Transportation Safety Act and supports the rules and guidelines set forth by the International Civil Aviation Organization (ICAO) Technical Intructions. In both cases, the regulations require that all persons handling, documenting or transporting hazardous materials/dangerous goods receive INITIAL and RECURRENT TRAINING.

This training is ideal for safety directors, security personnel and billing personnel in the chemical, petroleum, pharmaceutical, hospital, printing and paint industries, as well as for government personnel. The program covers: domestic and international regulatory agency review; enforcement procedures and penalties; purpose and use of hazardous materials tables; hazardous classifications and packaging requirements; shipper's certification; vehicular and container placarding; hazardous substances and wastes; and introduction to International Air Transport Association (IATA) and ICAO regulations with comparative analysis of Title 49; the dangerous goods list and its use; dangerous goods definitions and packaging requirements; and the U.S. Government (USG) variations and their impact. The instructor, Darlene W. Hunt, President of Hunt & Associates, Inc., and a nationally recognized expert in the domestic and international transportation of hazardous materials and dangerous goods, is known for turning a subject often viewed as being tedious and complex into an exciting and meaningful learning experience.

Darlene W. Hunt, President, Hunt & Associates, Inc., Cordoba, TN

VISION '90s

October 29-31, 1990
Las Vegas, Nevada

VISION '90s

National Safety Council Congress and Exposition
October 28-November 1, 1990
Las Vegas, Nevada

1990 REGISTRATION AND HOUSING FORM

Please photocopy forms and keep these instructions for your records.

REGISTRATION INFORMATION AND INSTRUCTIONS

Registration for the 1990 National Safety Council Congress & Exposition is simple. The following explains the Congress format. Once you have read this material, fill in the Registration section of the following form and return it along with the applicable fees to the National Safety Council Registration and Housing Office. Telephone registrations will not be accepted.

Types of Registration

Full Congress & Exposition entitles you to attend Congress sessions Sunday through Thursday, and the Exposition Monday through Wednesday.

One-Day Congress & Exposition entitles you to attend Congress sessions and the Exposition on either Monday, Tuesday or Wednesday. *You must indicate the applicable code for the day you plan to attend.*

Distributor. If you are a distributor of safety/health products or services, you can register as a distributor and attend the Exposition Monday through Wednesday. *Be sure to staple your business card to the registration form.*

One-Day Exposition entitles anyone to attend the Exposition on either Monday, Tuesday or Wednesday. *You must indicate the applicable code for the day you plan to attend.*

Student entitles any full time student to attend the Congress sessions Sunday through Thursday, and the Exposition Monday through Wednesday. *A copy of your student I.D. must be enclosed with your registration form.*

Spouses. If your spouse accompanies you and he/she is not a safety professional, a complimentary registration is available. Be sure to list his/her full name in the boxes at the top of the registration form.

Professional Development Seminars. Seventeen Professional Development Seminars (PDS) are offered this year. These seminars are held on Thursday or Friday and run from 9:00 a.m. until 4:00 p.m. **There is a separate charge for each seminar.** Upon completion, each participant will receive applicable CEU credits.

Early Registration Discount Fees

Attendees who register by September 28 are able to take advantage of the Early Registration Discount and save $10 to $80 on the regular fee. Following is a list of Early and Regular registration fees.

Registration		Early	Regular
Full Congress & Exposition	Member	$180	$230
	Nonmember	$240	$320
	Government	$180	$230
One-Day Congress & Exposition	Member	$110	$140
	Nonmember	$140	$170
Distributor		$ 50	$ 70
One-Day Exposition		$ 40	$ 50
Student		$ 40	$ 50
Professional Development Seminars	One-Day:		
	Member	$140	$190
	Nonmember	$190	$240
	Two-Day:		
	Member	$280	$360
	Nonmember	$360	$480

Fees Required with Registration

All registration fees must be received with the registration form. Do not FAX. Please make checks or money orders payable to National Safety Council/ITS.

Demographic Information

It is important that the demographic section of the registration form be completed by each participant. This information is gathered to help design a better Congress for all participants.

Attendance Policy

Young people under the age of 12 are not permitted to attend the Exposition, sessions, committee meetings or similar Congress activities. This restriction also applies to the setup and teardown days of the Exposition. Only one family member, spouse or child, may register free of charge for each fully-registered attendee. Therefore, any additional qualified family members must pay the applicable registration fee.

Individuals under the age of 12 are welcome to participate in the open social activities such as the tour program and Congress Night Out if accompanied by a parent or adult. Proof of age may be required. The National Safety Council reserves the right to deny admittance to any individual thought to be under the required age.

The Council imposes these restrictions in deference to speakers and attendees who seek to exchange the latest in safety and health information and products. The Congress and Exposition provides a business purpose and is not generally considered an area appropriate for children.

Video Taping and Audio Recording Policy

Video Taping

Due to the intricate and often sensitive technical material, and additionally, as a courtesy to the speakers and audience, video taping is expressly prohibited in any Congress education session, committee meeting or other function. This restriction also applies to the Exposition.

Audio Taping

Audio taping by personal hand-held recorders not tied into the sound system of the meeting room is only permitted when in compliance with the following restrictions:

The request must be submitted in writing to the Convention Department prior to the start of Congress. If approved by all parties concerned, written approval will be issued. Such approval must be brought to the session, meeting or exhibit hall and submitted to the Council staff representative present.

The recorded material is limited to personal use and may not be distributed to anyone else or further duplicated in any fashion.

Failure to comply with these policies automatically cancels the registration and right to participate. In such case, refunds will not be issued.

No Smoking Policy

Areas adjacent to the Exposition floor will be designated for smoking. Otherwise, it is Council policy that smoking is prohibited at all Congress activities (includes Exposition, Sessions, Committees).

Badge Returned by Mail

A confirmation will be sent to each participant. If you register by September 28, your Congress identification badge will be mailed to you at the address listed on the registration form. Registrations received after September 28, require that the attendee pick up his/her badge on-site at the Late Advance Registration Area.

Cancellation Policy

Cancellation requests must be sent in writing to the Registration and Housing Bureau of the National Safety Council. A $25.00 processing fee will be incurred on cancellations received by September 28. No refund will be issued on cancellations received after September 28. *Telephone cancellations will not be accepted.* Refunds will not be issued until after Congress regardless of when they were requested.

On-Site Registration

On-Site registration will be available as follows:

Las Vegas Convention Center		
Saturday	October 27	8:00 am-4:30 pm
Sunday	October 28	8:00 am-4:30 pm
Monday	October 29	7:00 am-4:30 pm
Tuesday	October 30	7:00 am-4:30 pm
Wednesday	October 31	7:00 am-2:00 pm

See reverse side for Hotel Reservation Information

Hotel Reservations Information and Instructions

Making hotel reservations for the 1990 Congress is easy and will be efficiently processed if you read the following information carefully. Upon review, complete the hotel portion of the Registration and Housing form and return it to the Registration and Housing Office.

IMPORTANT INFORMATION.
PLEASE READ CAREFULLY!

1 Congress registration is required to establish your hotel room reservation. All applications must be made on the following Registration and Housing form and mailed to National Safety Council Registration and Housing **(see address shown on the form.)** Do not send to the Council Headquarters Office. **No reservations will be accepted over the phone, or accepted directly by the hotels.**

2 Room confirmations will be issued by the Registration/Housing Office.

3 **All Las Vegas Hotels require an advance deposit to establish a room reservation.** The deposit must be in the form of a company or personal check, or a money order, made payable to National Safety Council/ITS. Credit cards or Government Purchase Orders will not be accepted for deposits. (Credit cards will be accepted at check-out for final payment.)

Deposit Amounts:
1 Room—single or double occupancy: $100.00
Suite—parlor + 1 bedroom: $300.00
Suite—parlor + 2 bedrooms: $400.00

4 All deposits are fully refundable if the room reservation is properly cancelled at least 48 hours in advance of the scheduled check-in date. Be sure to record when, how and with whom the cancellation occurred.

5 Las Vegas hotels have offered Limited Saturday check-ins for Congress. Rooms will be reserved on a first come, first served basis. Due to this circumstance, you should consider Friday or Sunday arrival; it may eliminate problems later.

6 Be sure to list names of everyone who will occupy the sleeping room.

7 If accommodations are not available at the hotels of your choice, comparable rooms will be reserved at other cooperating hotels. If the requested rate is not available, the next available rate will be assigned.

8 In order to secure a sleeping room, **reservations must be received prior to September 28.** After this date, requests will be handled on a space available basis.

9 All room rates include a fee to help cover the cost of the Congress Shuttle System.

Room Rates			Suite Rates			Hotel Name and Address	General Informatio						
Single (One person, one bed)	Double (Two persons, one bed)	Twin (Two persons, two beds)	Suite, Parlor and One Bedroom	Suite, Parlor and Two Bedrooms	Code for Map Location		Very Limited Saturday Arrivals	No Smoking Rooms	Handicapped Rooms	Government Rate*	No Casino	Free Airport Shuttle	Health Club (May be Extra Ch
54	54	54	160	225	01	Aladdin 3667 Las Vegas Blvd., South		●	●				
98	98	98	98	–	02	Alexis Park 375 East Harmon (all suite hotel)		●	●	●	●	●	●
85	85	85	209 650	288 1250	03	Bally's Grand 3645 Las Vegas Blvd.	●	●	●				●
86	86	86	–	–	04	Courtyard by Marriott 3275 Paradise Road		●	●		●		
95 135	95 135	95 135	250 500	375 650	05	Desert Inn 3145 Las Vegas Blvd., South	None	●	●				●
90 110	90 110	90 110	275 950	375 1250	06	Las Vegas Hilton 300 Paradise Road		●	●	●			●
84	84	84	325	450	07	Mirage 3400 Las Vegas Blvd.		●	●				●
75	75	75	225	325	08	Riviera 2901 Las Vegas Blvd., South			●	●			●
81	81	81	275 1500	300 1500	10	Sands 3555 Las Vegas Blvd., South		Only a few		●			●
84 94	84 94	84 94	94	–	11	St. Tropez 455 East Harmon Ave. $84, 1 room suite, king only $94, 2 room suite, king or twin			●		●		
75	75	75	200	275	12	Tropicana 3801 Las Vegas Blvd., South	●	●	●	●			●

All Congress hotels offer:

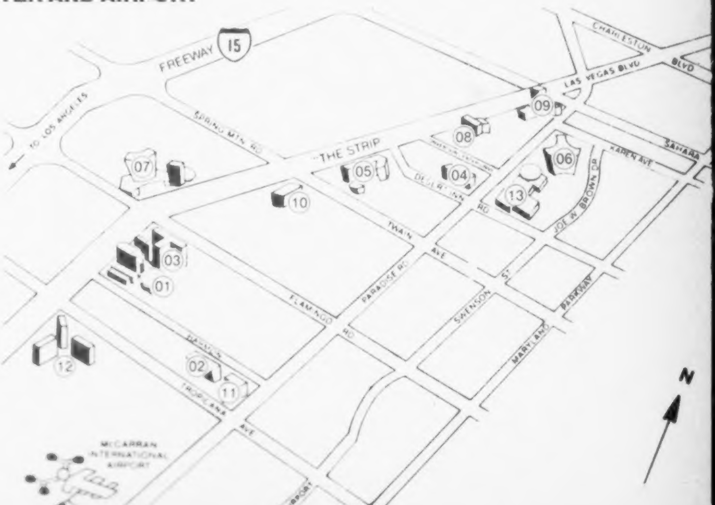
- Transportation service by Congress Shuttle to both the Las Vegas Convention Center and the neighboring Las Vegas Hilton Hotel
- Free parking
- Convenient airport transportation service at minimal costs
- Swimming pool

* Government Rate: Hotels indicated have a limited number of government rate rooms at $69.00 including tax. If rooms sell out, an alternate hotel will be assigned. Reservations require that an official government identification be presented at time of check-in.

CONGRESS HOTELS IN RELATION TO CONVENTION CENTER AND AIRPORT

ENTER PREFERRED HOTELS NAMES AND CODE LETTERS ON HOUSING FORM

01-Aladdin
02-Alexis Park
03-Bally's
04-Marriott Courtyard
05-Desert Inn
06-Las Vegas Hilton
07-Mirage
08-Riviera
09-Sahara
10-Sands
11-St. Tropez
12-Tropicana
13-Las Vegas Convention Center



VISION '90s

National Safety Council Congress and Exposition
October 28-November 1, 1990
Las Vegas, Nevada

1990 Registration and Housing Form

I. TYPE OR PRINT VERY CAREFULLY

Name ________ ________
First Last

Title ________

Organization ________

Address ________

City ________ State ____ Zip ________

Province ________ Country ________ Postal Code ________

Phone ________ FAX ________

Check One ☐ National Safety Council Member, Customer Number ________ ☐ Non-member

Spouse Name ________ ________
First Last

Complimentary if attending and not a safety professional

II. ATTENDEE INFORMATION: MUST BE COMPLETED FOR PROPER REGISTRATION

PURCHASING POWER

During the year, I plan to make/influence the purchase of products on display at the Exposition of approximately

- ☐ 1 Less than $10,000
- ☐ 2 $10,000-24,999
- ☐ 3 $25,000-99-9999
- ☐ 4 More than $100,000

NUMBER OF EMPLOYEES

- ☐ R 0-249
- ☐ S 250-499
- ☐ T 500-999
- ☐ U 1,000-4,999
- ☐ V 5,000 or more

IS THIS YOUR FIRST CONGRESS?

- ☐ 72 Yes
- ☐ 73 No

STANDARD INDUSTRIAL CLASSIFICATION (Primary)

- ☐ 07 Agriculture
- ☐ 45 Air Transportation
- ☐ 79 Amusement & Recreation
- ☐ 23 Apparel
- ☐ 28 Chemicals
- ☐ 48 Communications
- ☐ 15 Construction
- ☐ 92.1 Courts
- ☐ 82 Education
- ☐ 49 Electric/Gas/Sanitary Services
- ☐ 36 Electronic Equipment
- ☐ 20 Food and Kindred Products
- ☐ 08 Forestry
- ☐ 99.4 Government
- ☐ 63 Insurance
- ☐ 86.3 Labor Unions
- ☐ 99.2 Law Enforcement
- ☐ 35 Machinery
- ☐ 39 Manufacturing
- ☐ 80 Medical/Health
- ☐ 86 Membership Organizations
- ☐ 33 Metals
- ☐ 10 Mining
- ☐ 26 Paper
- ☐ 29 Petroleum
- ☐ 27 Printing and Publishing
- ☐ 91 Public Administration
- ☐ 40 Railroads
- ☐ 30 Rubber and Plastics
- ☐ 41.5 School Buses
- ☐ 70 Services
- ☐ 99.1 State DOT
- ☐ 32 Stone/Clay/Glass
- ☐ 22 Textile Mill
- ☐ 52 Trade, Retail
- ☐ 50 Trade, Wholesale
- ☐ 99.3 Traffic Safety
- ☐ 41 Transit Properties
- ☐ 42 Trucking
- ☐ 44 Water Transportation
- ☐ 99 Other ________ (please specify)

MAJOR JOB FUNCTION (Check one)

- ☐ 18 Buyer/Purchasing Agent
- ☐ 19 Claims/Insurance/Risk Managers
- ☐ 43 Environmental Technical/Hazardous Waste/Industrial Hygienist
- ☐ 44 Fire Protection
- ☐ 45 Fleet Safety
- ☐ 52 Industrial/Labor Relations Manager
- ☐ 53 Law Enforcement Officer/Administrator
- ☐ 55 Loss Control Consultant
- ☐ 56 Maintenance/Operations/Production Manager
- ☐ 57 Medical Service/Occupational Health Director
- ☐ 60 Personnel Services
- ☐ 61 Product Safety
- ☐ 62 Recreation Manager
- ☐ 69 Safety and Health Administrator/Director/Engineer/Officers/Manager/Specialists/Supervisor/Coordinator
- ☐ 71 Safety Trainer/College Instructor/Vocational Educator/Curriculum Specialist
- ☐ 72 State FFA/4-H Leaders
- ☐ 73 Street/Highway Department Supervisors
- ☐ 74 Students

III. REGISTRATION CATEGORIES

Note Early-Bird Discounts

	Advance	After September 28
Full Congress and Exposition		
01 Member (90102)	$180	$230
02 Nonmember (90102)	$240	$320
18 Government Employee (90435)	$180	$230
One-Day Congress and Exposition		
Member (90108)		
03 Monday 05 Tuesday 07 Wednesday	$110	$140
Nonmember (90108)		
04 Monday 06 Tuesday 08 Wednesday	$140	$170
09 Distributor (90114)	$ 50	$ 70
One-Day Exposition Only (90122)		
10 Monday 11 Tuesday 12 Wednesday	$ 40	$ 50
14 Student—I.D. Required (90118)	$ 40	$ 50

FEE PAYMENT

	Code	Amount
III. Registration (See neighboring information)	________	$________
IV. Special Events (Transfer from reverse side)	________	$________
V. Professional Development Seminars (Transfer from reverse side)	________	$________
VI. Hotel Deposit (Government Purchase Orders not accepted)	________	$________
Grand Total	________	$________

RETURN FORM AND FULL PAYMENT OR GOVERNMENT PURCHASE ORDER TO:

Do not send via FAX.

National Safety Council Registration and Housing
c/o ITS 104 Wilmot Road, Suite 300
P.O. Box 825
Deerfield, IL 60015

Money orders or company/personal checks should be made payable to National Safety Council/ITS.

G

ADMISSION BY BADGE ONLY TO ALL CONGRESS SESSIONS & EXPOSITION

See reverse side for Hotel Reservation Information

IV. SPECIAL EVENTS

Check items for each registrant and transfer codes and fees to reverse side. Tickets will be issued for items indicated.

		Ticket Quantity	
01	Inter-faith Prayer Breakfast (90198)	________	x $10 each
02	Congress Night Out—To Be Announced	________	x $________each

V. PROFESSIONAL DEVELOPMENT SEMINARS

Note Early Bird Discounts

Check all seminars for each registrant and transfer codes and fees to reverse side. Tickets will be issued for admission and must be turned in to obtain continuing education credit. Sign up for 1 seminar per day.

		Advance	After September 28
One Day—	Member	$140	$190
	Nonmember	$190	$240
Two Day—	Member	$280	$360
	Nonmember	$360	$480

ONE-DAY SEMINARS Thursday, November 1, 9:00 a.m.-4:00 p.m.

	Community Topics	**Amount**
01	Beyond Behavior Modification: What's New in Safety Motivation (90429)	________
02	Liability Loss Control for the Public Employer (90431)	________
	Occupational Topics	
03	Practical Ergonomics in the Workplace (90148)	________
04	Training Concepts for the Safety Trainer—Part I (90154)	________
05	Selling Safety to Management (90166)	________
06	You and Systems Safety (90145)	________
07	Hazardous Waste Management (90401)	________
08	Confined Space Awareness (90423)	________
09	Compliance with the OSHA Lockout/Tagout Standard (90433)	________
	Friday, November 2, 9:00 a.m.-4:00 p.m.	
	Occupational Topics	
10	The Back Injury: Prevention and Control (90158)	________
11	Training Concepts for the Safety Trainer—Part II (90403)	________
12	The Saf-T-Tree (90405)	________
13	Accident Analysis (90152)	________
14	Quality Listening (90425)	________
15	Educating Management in the Principles of Accident Prevention (90427)	________
	TWO-DAY SEMINARS	
	Thursday and Friday, November 1-2, 9:00 a.m.-4:00 p.m.	
16	Hazardous Material Transportation (90417)	________
17	Applied Ergonomics (90421)	________
	Per Person Total	$________

VI. HOTEL RESERVATIONS

Use hotel codes and rates found on the Hotel Reservation Information and Instructions page, and complete all 4 choices:

Dates	Arrival Day and Date	Departure Day and Date	
1st Choice Hotel	2nd Choice	3rd Choice	4th Choice

Hotel Choice Based On:	☐ Rate	☐ Location	☐ Hotel
Type of Accommodations	☐ Single—1 person, 1 bed	☐ Double—2 persons, 1 bed	☐ Twin—2 persons, 2 beds
	☐ Suite, Parlor + 1 bedroom	☐ Suite, Parlor + 2 bedrooms	

Room Rate Requested $____________

Rooming with____

Special Requests—Check all that apply:

☐ No Smoking Room if available
☐ Handicap Accessible Room
☐ Other____

Room Deposit Required:

1 Room—Single/Double	$100
Suite—Parlor + 1 bedroom	$300
Suite—Parlor + 2 bedrooms	$400

Return this form and payment to:

National Safety Council Registration and Housing
c/o ITS 104 Wilmot Road, Suite 300
P.O. Box 825, Deerfield, IL 60015

Do not send via Fax. **Money orders or company/personal checks should be made payable to National Safety Council/ITS.**

This year, you may be required to pass the toughest test you've taken in years, to qualify for the commercial drivers license. If you've been hearing rumors about how CDL testing can take you off the road, take it easy. There's a simple way to get a balanced view of what's required, and that same video program will help you to master everything you need to know.

The National Safety Council's behind it, and learning is almost as easy as watching TV.

- The **CDL Pre-Trip** and **Skills Training Program** is a complete learning package that combines two 30-minute VHS videotapes:
  - —"The Pre-Trip Inspection Video" and
  - —"The Skills and Road Test Video."
- **The videos let you actually experience both important components of CDL testing through simulated tests.**
- And they cover **all** the material you need to know in order to pass.
- Guides are included with both tapes, and they make it easy to use the program in group study or by yourself.
- Both videos also include discussion of errors that result in automatic failure and point reduction.

The CDL License Skills Training Program is available for a limited time at just $99.95 for National Safety Council members, and $124.95 for non-members. Call today to order, or for information on other National Safety Council CDL programs.

CDL videos keep you on the road and in the money.

Stay on the road, and keep those paychecks coming.

Just a couple of hours stands between you and your CDL license. Get your training program now.

National Safety Council

444 N. Michigan Ave. ■ Chicago, Illinois 60611

1-800-621-7619
ext. 8502
1-312-527-4800 (in Illinois) ext. 8502

CDL
National Safety Council

I did some really quality networking today. This is definitely the place to meet the right people.
You really do learn a lot at Congress, don't you? I mean about the important stuff you can use right away.
Did you see that exhibit featuring interactive video training? What a great idea!
In Las Vegas, the price is right! The airfare, hotel and food are a real bargain.

National Safety Council
Congress & Exposition
October 28–November 1, 1990
Las Vegas, Nevada

- Over 650 Exhibits of the Latest Technology and Services
- 180 Educational Sessions Concerning the Important Issues in Safety and Health
- 15,000 Participants from Occupational Safety and Health and Other Fields

Discount Registration Fee in Effect Until September 28, 1990

VISION '90s

Please send me details on the **National Safety Council** 1990 Congress & Exposition.

( ) Please check if you have attended a previous Congress.
( ) Please check for membership information.

Name

Organization

Address (No P.O. Box, Please)

City, State, Zip

MAIL TO: Convention Department, National Safety Council, 444 North Michigan Avenue, Chicago, IL 60611

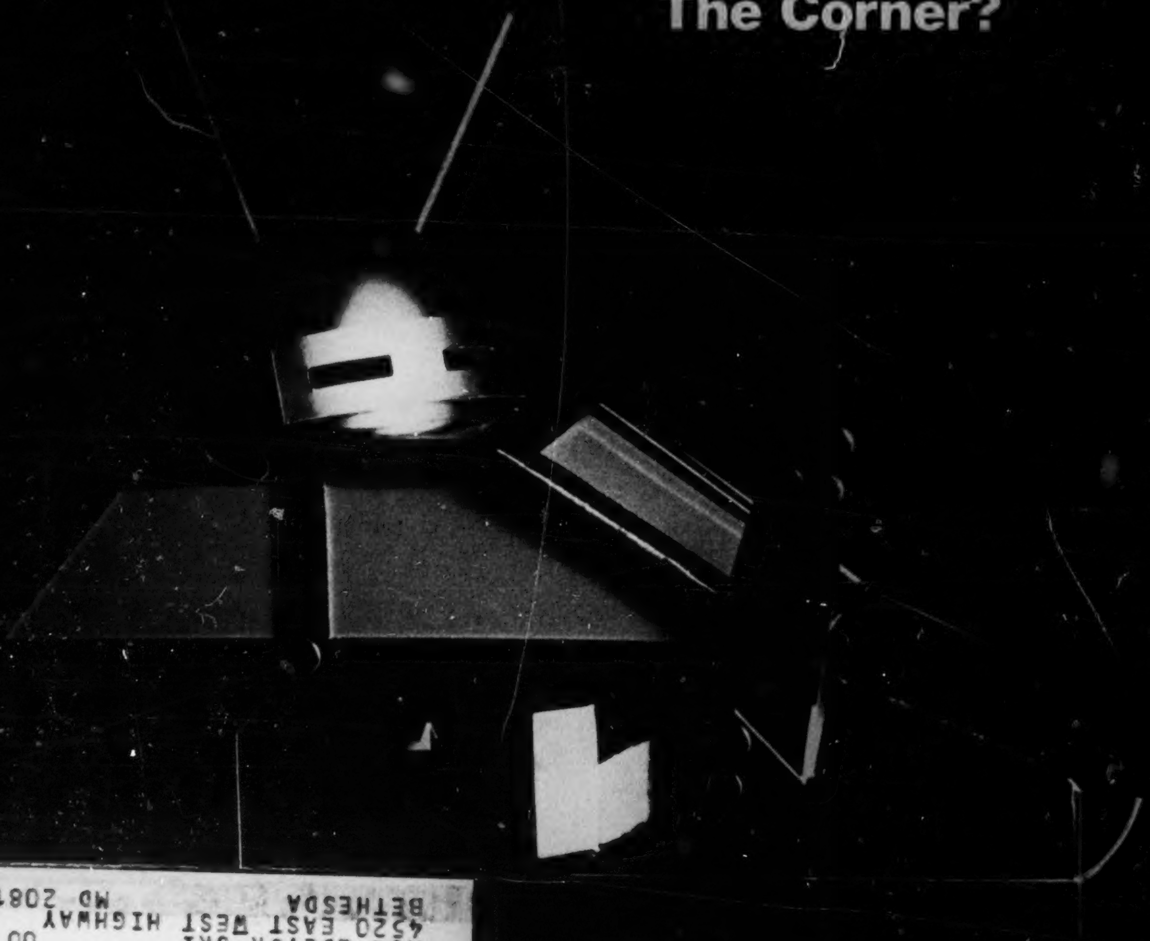
A8375-1

November/December 1990

$4.75

National Safety Council

Is 'Robocar' Just Around The Corner?



0000 1 TS 6718710006 NOV
CONGRESSIONAL INFORMATION SVC
ACQ EDITOR SRI 00 06/91
4520 EAST WEST HIGHWAY
BETHESDA MD 20814

Posters shown on this page—for Traffic and Motor Transportation programs—are actually printed in two or more colors. For additional posters in all areas of safety, please refer to the great variety illustrated in the National Safety Council Directory of Safety Posters.

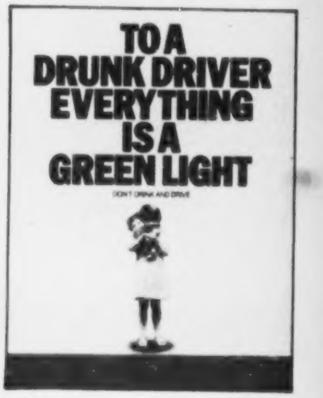
Automatic poster services on yearly subscription basis are available for various Motor Transportation divisions—write for full information.

NEW POSTERS

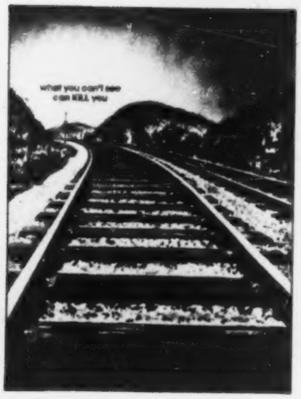
NOVEMBER/DECEMBER, 1990

	QUANTITIES		
SIZE	10	100	1000
Suffix "A"	$ .69	$ .45	$.37
Suffix "B"	$1.50	$1.05	$.83

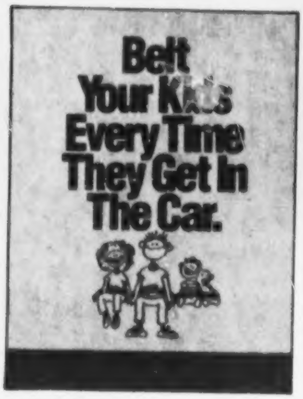
	QUANTITIES		
SIZE	10	100	1000
Suffix "A"	$ .87	$ .56	$.46
Suffix "B"	$1.89	$1.30	$1.05


TO A DRUNK DRIVER EVERYTHING IS A GREEN LIGHT
DON'T DRINK AND DRIVE

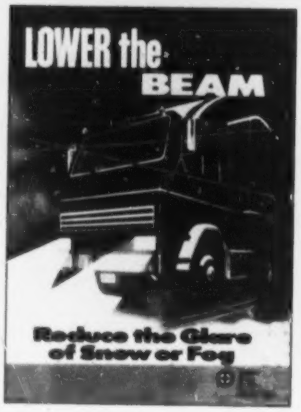
7504-A 4/C **8½x11½**


what you can't see can KILL you

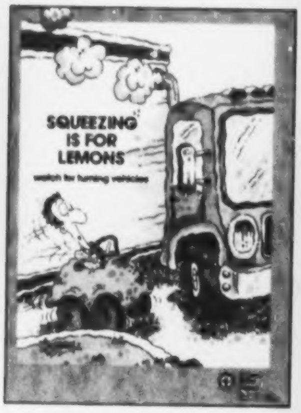
7524-A 4/C **8½x11½**


Belt Your Kids Every Time They Get In The Car.

7525-A 4/C **8½x11½**


LOWER the BEAM
Reduce the Glare of Snow or Fog

7620-A 4/C **8½x11½**


SQUEEZING IS FOR LEMONS
watch for turning vehicles

7644-A 4/C **8½x11½**

NOVEMBER/DECEMBER, 1990

Poster No.	Quantity
7504-A	
7524-A	
7523-A	
7620-A	
7644-A	

Terms:
ONLY NATIONAL SAFETY COUNCIL MEMBERS ARE ENTITLED TO MEMBER PRICES. All orders eligible for 2% discount if payment is made within 15 days of invoice date; net 30 days. Service charge of 1½% per month on all invoices unpaid after 30 days. Shipments FOB Chicago. U.S. Federal Agencies: terms of current GSA contract apply Government agencies must use Purchase Orders.
ORDERS UNDER $25.00; ADD $3.00 SERVICE, HANDLING AND SHIPPING CHARGE. FULL PAYMENT MUST ACCOMPANY ORDER.

SHIP TO: Organization ______
Address (No P.O. Box, Please) ______
City ______ State ______ Zip Code ______
Attention of ______ Title ______

For Office Use Only

MAIL ORDERS TO YOUR LOCAL COUNCIL, OR

National Safety Council
P.O. Box 11933
Chicago, IL 60611

Publisher: Kevin H. Axe (312) 527-4800, ext. 7101

Editorial Director: Maureen Glass (312) 527-4800, ext. 7103

Coordinator: Richard Frisbie

Managing Editor: Austin Weber (312) 527-4800, ext. 7108

Associate Editors:
Dawn DeLong
James W. Lahey

Art Director: Anne F. Malone

Cover: Constructs Studio, art; Terry Vitacco, photo

Director, Publications Marketing: Kevin Shanley, (312) 527-4800, ext. 7401

Advertising/Circulation Manager: Joel Wakitsch (312) 527-4800, ext. 7404

Advertising Sales:

East
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Diane Borker (312) 527-4800, ext. 7402

Advisors:

Noel Bufe, Ph.D., *director, Traffic Institute, Northwestern University, Evanston, Ill., vice president for traffic,* Walter D. Weiss, *group director of safety, Leaseway Transportation Corp., Birmingham, Mich., vice president for motor transportation;* Neil Boot, *director, driver improvement programs;* Ted E. Dudzik, *traffic law enforcement and police records specialist;* Jan Hazlett, *school transportation safety specialist;* Tim Kennedy, *occupant restraint specialist;* Al Lauersdorf, *alcohol programs administrator;* John McCarthy, *manager, program development and training, driver improvement programs;* Harold Thompson, *manager, highway traffic safety services;* Lester B. Sokolowski, *director, motor transportation;* James Solomon, *administrator of training, driver improvement programs;* Richard L. Tippie, *director, transportation safety.*

TRAFFIC SAFETY (ISSN 0041-0721) is published bimonthly by the NATIONAL SAFETY COUNCIL, 444 N. Michigan Ave., Chicago, Ill. 60611. Copyright © 1990 by National Safety Council. Printed in U.S.A. Second Class postage paid at Chicago, Ill. and at additional offices. POSTMASTER: Send address changes to National Safety Council, 444 N. Michigan Ave., Chicago, Ill. 60611.

U.S. Subscription rate: $15.20 to members of the National Safety Council; $18.98 to non-members. Quantity and foreign rates available on request.

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November/December 1990

National Safety Council

TRAFFIC SAFETY

Vol. 90 No. 6

IS "ROBOCAR" JUST AROUND THE CORNER? 8
THOMAS FRISBIE
In this scenario, cars drive themselves without crashes

FAMILIARITY BREEDS CRASHES 14
MICHAEL MALONE
How many brake lights does it take to protect rear ends?

MAKING KIDS TRULY STREET SMART 17
MICHAEL ELDRITCH
How New York City is saving its children from its drivers

OSHA TIGHTENS SAFETY BELTS ANOTHER NOTCH 21
JIM CASTELLI
New on-the-job rules to require driver training too

WRONG SIGNALS PUT RIGHT 24
Texans call 1-800 to prevent railway crossing tragedies

MADD GLAD 26
ANNE RUSSELL
Mothers' group sees its anti-DWI program taking hold

ACCIDENT FACTS 28
Condensed report on totals from 1990 edition

4 Today's Traffic
5 Shortcuts
12 Two-Way Street
13 Survey
23 Events
30 New Products
31 Library
32 Statistics

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Home Office, 444 N. Michigan Ave., Chicago 60611, (312) 527-4800

Printed in U.S.A.

Stock No. 311.03-060

TODAY'S TRAFFIC

School Bus Drivers Get Muscle

A new Iowa law enabling school bus drivers to report motorists who illegally pass their stopped vehicles has resulted in a five-fold increase in the number of citations issued for the offense, according to a study by the Iowa Department of Transportation. In 1989, 1,675 Iowa drivers were cited for passing stopped school buses, compared to 321 in 1987.

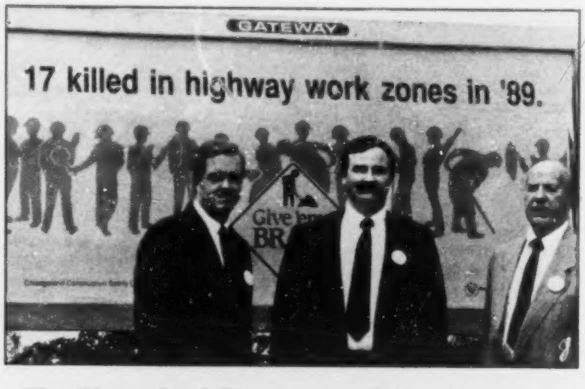
The law allows bus drivers to turn over the license number and description of a violator's vehicle to law enforcement officers, who track it down and issue a citation.

The Iowa law requires motorists to reduce their speed to no more than 20 mph when approaching a school bus that has its amber warning lights flashing, and to stop completely when the school bus stops and has its stop arm extended. The driver's vehicle must stop no closer than 15 feet from the bus and remain stopped until the stop arm is retracted.

Drivers are not allowed to pass a school bus moving in the same direction if its amber or red warning lights are flashing. However, a driver going in the opposite direction to the school bus can pass the bus on a road with at least two traffic lanes in each direction. Drivers are not required to stop even if the bus is stationary.

Contractors Fund Safety Campaign

The Illinois Department of Transportation's (IDOT) "Give 'Em A Brake" safety program, designed to persuade motorists to slow down when driving through highway construction zones, is getting support from a group of Chicago area contractors.


GATEWAY
17 killed in highway work zones in '89.
Give 'em
BR

The Chicagoland Construction Safety Council is financing a billboard campaign for the program. The group has erected 150 billboards within the six-county metropolitan Chicago area. The unique sign has a background of faded gray silhouettes representing people killed in highway construction and repair zones with a message across the top indicating the exact number of these deaths that occurred within the last year. The Illinois "Give 'Em A Brake, Slow Down" safety message is printed across the middle of the billboard.

Another group of Illinois contractors, the Associated General Contractors of Illinois, is helping IDOT bring the billboard campaign to other areas of the state. In addition, participating companies are donating extra billboards to help get the safety message out.

Crack Down on Safety Belt Use

A Texas program that offers offenders the choice of attending a two-hour class instead of paying a $50 fine has resulted in increased enforcement of the state's mandatory safety belt use law (MUL). The program was developed by the police department of Arlington, Tex. in cooperation with the Arlington municipal court system.

The $10 class, which violators are allowed to attend for only one safety-belt citation, is offered four nights a week and Saturday. Once the option has been chosen, failure to attend class results in issuance of a bench warrant.

A follow-up study conducted by the Texas Transportation Institute, Human Factors Division, Texas A&M University, six months after the program was in effect found the following:

- Nearly half of those issued citations chose to take the class.
- There was a significant increase in the number of class participants who said they always or almost always wore a safety belt.
- Offenders who attended the class were less likely to have previously been involved in crashes than those who chose not to attend class.
- Of those who attended class, 3.9 percent received another MUL citation during a 13-month tracking period, while 8.5 percent of violators who did not attend class were cited again within the same period.
- There was a four-fold increase in the number of MUL citations issued by the Arlington police department after the project began.

Pedestrian Safety Rewarded

Safety education and enforcement programs pay off for communities who take pedestrian safety seriously, according to the American Automobile Association's Pedestrian Protection Program. The program is designed to encourage communities to teach pedestrian safety and to strictly enforce related laws.

Four locations—a state, a county, and two cities—were recently found to be the safest places in the United States to cross a street. The winners of the AAA's 51st annual Pedestrian Protection Program's Grand Awards were the state of Wisconsin; Henrico County, Virginia; and two California cities, San Jose and Rocklin. The award was the fourth for both Wisconsin and San Jose.

The 2,454 cities that participated in the safety contest were grouped by population and evaluated on their safety programs, enforcement levels, traffic engineering and pedestrian death and injury rates.

Each winner had developed an organized effort to teach children, adults and senior citizens the dangers they face as pedestrians, according to AAA. In addition, winners had active enforcement programs. For example, San Jose police issued 355 tickets to pedestrians who crossed against traffic signals in 1989.

Tips for Older Drivers

A multi-media exhibit designed to show older adults how driving can be made more safe and comfortable will travel across the United States from now through 1991.

Older adults can learn how to help compensate for changes in vision, flexibility and reaction time through occupant-protection systems, such as air bags, shown at the exhibit. Demonstrations also will show how to select cars and properly use safety features.

The exhibit was designed by the ITT Hartford Insurance Group to encourage older drivers to buy and use safety features in their cars.

ANTI-LOCK BRAKES
Inflation We Can Live With

Students Should Buckle Up

Laws that require the installation and use of safety belts in school buses would improve overall safety for students, according to a study by the New Jersey Institute of Technology's (NJIT) Center for Transportation Studies and Research.

The study was designed to determine the effectiveness of the use of lap safety belts in all Type I and Type II school buses, and whether belts should be required. The researchers combined the results of a variety of studies in making the following recommendations:

- Safety-belt use should be mandated for all occupants of school buses, including students, monitors, drivers, teachers and parents.
- Use of safety belts on school buses should be strictly enforced.
- Safety belts should be introduced into a state's school-bus fleet as the fleet is renewed because of the difficulty in installing safety belts in existing vehicles.
- If continuing research finds that rear-facing students are safer than conventional forward-facing seats, they should be required for school buses.
- Mechanical gates, electronic sensors, video monitors, stop arms on the sides of buses and better driver training are measures that should be taken to reduce injuries and fatalities.

The study was performed for the New Jersey Department of Law and Public Safety, Office of Highway Traffic Safety, and funded by the Senate Law, Public Safety and Defense Committee of the New Jersey Legislature.

SHORTCUTS

Busting Fuzz Busters

The Federal Highway Administration (FHWA) will soon ask for public comments on a proposal to ban radar detectors — "fuzz busters" — in commercial vehicles. The agency responded to a request for the rulemaking from eight major organizations.

"A ban on radar detectors is needed to improve the compliance of commercial vehicle drivers with speed limits and to reduce the number and severity of crashes," the organizations said in a letter to FHWA administrator Thomas Larson.

Signers were the National Safety Council, Advocates for Highway and Auto Safety, the Insurance Institute for Highway Safety, the American Automobile Association, American Trucking Associations, the International Association of Police Chiefs, the National Association of Governors' Highway Safety Representatives, and Public Citizen.

Larson said in a reply to the signers, "We have concluded that your petition may have merit and intend to issue a notice of proposed rulemaking requesting public comment on various options for incorporating a ban on radar detectors into the *Federal Motor Carrier Safety Regulations*. Your supporting data will become part of the docket for that rulemaking."

FHWA denied a petition for a ban on radar detectors in commercial vehicles in 1988, but the proposal's supporters believe several factors have changed since then.

There is support in Congress for a ban. When the U.S. Department of Transportation held a "Traffic Safety Summit" for state and local law enforcement officials this year, participants recommended that FHWA bar detectors in commercial vehicles.

The petition said "a ban at this time promises to be more effective than in the past because of the availability of radar detectors as an enforcement tool for police."

The petition also said new research has shown the link between radar detectors and speeding more clearly.

CONVENTION SESSIONS ON AUDIO CASSETTES

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Monday, July 16, 1990

___ **Tape 1: Opening Ceremonies** — James Templeton — Clayton Hatch; Greetings from Florida — Leonard Mellon; Greetings from Metro-Dade County — Stephen Clark; Welcome to Forum — T.C. Gilchrest; Remarks — Noel Bufe, Ph.D.; Keynote Speaker — Dennis Judycki

___ **Tape 2: GENERAL SESSION I** Truck Safety Programs/National Perspective; "Truck Safety Programs/CVSA Overview" — L.F. Rollin; "Safetynet" — Patricia Savage; "TRB Study on Truck Safety Needs" — Donald Muri

___ **Tape 3: Luncheon Address** — Adele Derby

___ **Tape 4: CONCURRENT SESSION A-1** Truck Safety Information Systems — "National Truck Safety Monitoring System" — Ted Chira-Chavala; "Implementing the NGA Truck Accident Reporting Method" — Larry Holestine; "The Importance of Data in Safety Programs" — James O'Day

___ **Tape 5: CONCURRENT SESSION A-2** Tort Liability — "Maintaining Records for Risk Management" Sheldon Pivnik; "Case Study: A Traffic Engineer Defends Traffic Accident Cases" — Howard Chapman; "Giving Testimony in a Traffic Accident Case" — Daniel Turner, Ph.D.

___ **Tape 6: CONCURRENT SESSION B-1** Contributions of the Health Community to Traffic Safety Policy; "Trauma Registry as a Data Source for Traffic Safety Policy" — Richard Cales; "Data Linkage: Police Accident Reports and Hospital Injury Records" — James Eastham; "Injured Drinking Drivers: How They Escape the System" — Carl Soderstrom; "The Medical Advisory Board and Driver Licensing" — Elaine Petrucelli

___ **Tape 7: CONCURRENT SESSION B-2** Court Systems — "Automated Traffic Records Systems — Lap Top Citations, Law Enforcement & Court Systems; — Daniel Robinson and The Honorable Daniel Deja, Chief District Court Judge, Michigan; State of Washington's Court Liaison Program; "Benefit of Stakeholder Networking" — Elain Hagseth

Tuesday, July 17, 1990

___ **Tape 8: GENERAL SESSION II** Optical Disk and Imaging; "From Paper Fleas to Optical Disks, a Solution to the Paper Problem" — Wayne Roice; "Virginia's Optical Disk System" — Fred Small; "Current Technology and Future Trends in Optical Disks" — G. Richard Moore

___ **Tape 9: CONCURRENT SESSION C-1** Traffic Records Update; "Update on Michigan's Traffic Records System" — Calvin Roberts; "A Master Plan for the New Chicago Safety Information System" — Ronald Pfefer; "Ohio's Approach to an Enterprise CCSRS" — Richard Paddock

___ **Tape 10: CONCURRENT SESSION C-2** Geographical Information Systems (GIS); "What Is GIS?" — John Hoggatt; "Applications on Crash Reduction" — David Cipra, Ph.D.; "Global Positioning Systems (GPS) Geographic Information Systems (GIS) Link" — R. Merrell

___ **Tape 11: GENERAL SESSION III** — Forum Exchange — A Time to Share — Cecil Colson

___ **Tape 12: CONCURRENT SESSION D-1** Microcomputer Based Systems; "Low Cost Accident Analysis Package, Downloaded to Local Users" — Joyce Emery, Ph.D. and Scott Moreland; "Traser" — Marlin Crouse; "Lanser" — James Taylor

___ **Tape 13: CONCURRENT SESSION D-2** Emergency Medical Systems; "Assessing Motor Vehicle Crash Outcomes — Using Linked Files" — Garland Land; "EMS/Data Linkage" — Dennis Utter; "Use of the Florida Injury Control Information System in Targeting Injury Prevention Programs" — James Croushorn

Wednesday, July 18, 1990

___ **Tape 14:** **GENERAL SESSION IV** Commercial Driver License Status Report; "CDLIS Update" — Duncan MacPherson; "Commercial Driver Experiences in Maryland" — John Lyding; "Commercial Driver License Experiences in Utah" — Skip Nielsen; "Commercial Driver License Biometric Identifiers" — Brian Withrow

___ **Tape 15:** **CONCURRENT SESSION E-1** Contemporary State Data Activities; "State Data Conference Update" — Mark Edwards; "Critical Automated Data Reporting Elements (CADRE)" — Chuck Ventury; "Development of a Quality Control Manual for Police Accident Records Systems" — James O'Day

___ **Tape 16:** **CONCURRENT SESSION E-2** Engineering Applications; "Virginia's Automated Roadway File" — Langston Spell; "Highway Safety Information Systems: a State Based System for Roadway/Accident Research" — Jeffrey Paniati; "GIS/Video Disc Demonstration Project' Vincent Nowakowski

___ **Tape 17:** **CONCURRENT SESSION F-1** Driving While Intoxicated; "Alcohol/Drug Use by Victims Admitted to Trauma Centers" — Bud Jay; "Texas BAC/ME Study" — Nancy Mounce; "DWI Enforcement Using In-Car Video/Drug Recognition and Evaluation Program" — Robert Martin

___ **Tape 18:** **CONCURRENT SESSION F-2** Automated Vehicle/Driver Data Systems; "Automatic Monitoring and Enforcement of Highway Restrictions" — Neil Emmott; "Innovations and Integration in Image Capture, Storage and Retrieval — David Hodges; "CEA-2 Legislative Liaison" — Garry Nishite

___ **Tape 19:** **CONCURRENT SESSION G-1**; "NSC Defensive Driving Course — Attitudinal Dynamics of Driving" — James Solomon

___ **Tape 20:** **CONCURRENT SESSION G-2**; "Workshop on the Classification of Motor Vehicle Traffic Accidents" — Alan Hoskin & Benjamin Chatfield, Ph.D.

Thursday, July 19, 1990

___ **Tape 21:** **GENERAL SESSION V** Seat Belt/Occupant Restraints; "Occupant Restraints: Finishing the Job" — Richard Pain, Ph.D.; "Enhanced Child Restraint Pilot Project in the State of Texas" — Michael Clem; "State System Restraint Data: Strengths and Weaknesses" — Jeya Padmanaban; "Analysis of Automatic Restraint System" — Donald Reinfurt, Ph.D.

___ **Tape 22:** **CONCURRENT SESSION H-1** Evaluation of the 65mph Speed Limit; "Evaluation of the Texas 65mph Speed Limit" — Quinn Brackett, Ph.D.; "Enforcement Impact on 65mph" — Stephen O'Connor; "Update of the 65mph Speed Limit-National Perspective" — Sherri Boerner

___ **Tape 23:** **CONCURRENT SESSION H-2** Law Enforcement Applications; "Accident Data: Law Enforcement Perspectives" — Don Hinton; "Police Reporting with Notebook Computer" — Maurice McGough

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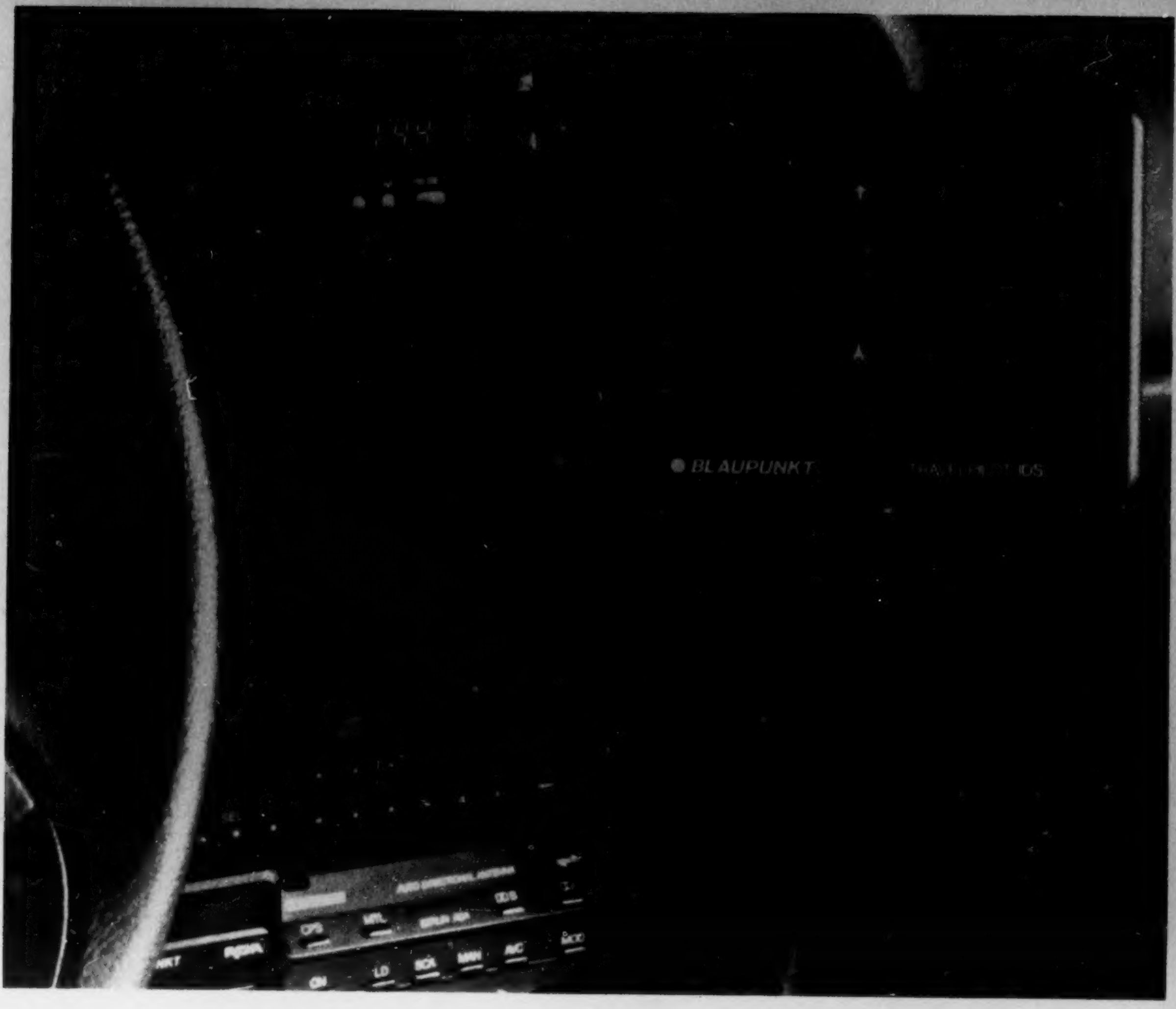


Is 'Robocar' Just Around The Corner?

In this scenario, cars drive themselves without crashes

BY THOMAS FRISBIE

FADE IN, ESTABLISHING SHOT. A *traffic-clogged urban superhighway.*

CUT TO: *A garage door, opening up to reveal . . .*

CLOSE UP: *Robocar.* MUSIC: *Ta-DA.*

Robocar is a typical auto of the late 20th or early 21st century. Its automated navigational system has just received a morning update from a central metropolitan traffic computer, and the incoming report has revealed the superhighway backup.

As Robocar leaves the garage, an arrow on an electronic dashboard map indicates Robocar's position, and the map provides an alternate route. The map is accompanied by instructions from a voice

A glimpse of the future: electronic street map tells motorists where they are, where they're going and how to get there. The self-contained system combines dead reckoning with street maps stored on compact disks. (Photo: Etak, Inc.)

---

inside the dashboard: "Turn right and prepare to take your third left . . ."

Soon, Robocar is safely on the alternate expressway route. Sensors embedded in the pavement keep Robocar in the proper lane, and radar-guided braking and cruise control ensure that Robocar won't collide with the vehicle in front. Robocar's horn will beep if the driver attempts to cut off another car while changing lanes. A vision-enhancement system, which also makes it easier to see at night, flashes warning images if trouble seems imminent. A driver-impairment monitor can tell that Robocar's driver isn't affected by lack of sleep or drugs. Robocar's driver doesn't have to worry much about speeders; vehicle identification microchips tell the electronic cops how fast everyone is going.

This morning, everything works smoothly. Robocar arrives at its destination on time and without incident. FADE OUT.

FOR MANY motorists and highway safety officials, the day of Robocar can't come too soon. Today's human drivers, unaided by Robocar's advanced technology, wind up in accidents that kill 46,900 people a year and injured 1.7 million.

No amount of technology can prevent all those crashes. But research has showed that a large percentage of crashes can be avoided if a driver reacts just a second sooner. Some engineers think Robocar can supply speedier reactions, as well as prevent drivers from making some dangerous mistakes altogether.

Part of Robocar already is here, of course. Even today, computers control auto engines, adjusting them from moment to moment to get the best fuel economy and the least amount of emissions. Computers are partly in charge of the brakes and other systems, too. They make braking, steering and ride control better. For many years, sensors embedded in expressways have notified highway officials in such places as Chicago and Los Angeles of traffic tie-ups, and computers help time traffic signals in such places as California and New York.

But many more Robocar features are just now taking shape on drawing boards or in experimental vehicles. In a few years, you may see them on the streets.

New Developments Monthly

"I think what is happening in research in the motor vehicle and communications industries is leading to new developments practically monthly," says Les Lamm, president of the Highway Users Federation, a trade association that works for highway safety and better roads.

General Motors' Delco Electronics Corp., for example, has built a Cadillac Seville with a radar cruise control that slows the car down on the expressway if another car suddenly switches lanes in front of it and then speeds it back up to 55 miles per hour when the lane is clear. A human driver in a car so equipped would not have had to touch the brake pedal or accelerator.

Experimental cars automatically slow if a car in front changes lanes.

Delco also is developing an infrared vision enhancement system that makes it easier for people with poor night vision to see cars and pedestrians in the dark. And there are plans for an electronic warning system that sounds — or maybe even voices — an alarm if there is a person, animal or another car behind a car that is backing up.

"The whole concept of radar braking is an element of IVHS (Intelligent Vehicle-Highway Systems)," Lamm explains. "It is a way to enable the operator to get better control of the vehicle.

"I do see definite safety benefits. In urban areas you could visualize fewer rear-end accidents. In rural areas, you eventually might be able to reduce or eliminate single-vehicle, run-off-the-road crashes — a late-night kind of accident. There are a lot of ways you can do it: a warning system, maybe a sensor in the vehicle that reads the sensor line in the road, maybe a beep or indicator.

"At a later stage, you might have a mechanical override that brings the vehicle back to the center of the lane."

Last March, researchers in the informal study group Mobility 2000 estimated that by the year 2010 IVHS might save roughly 11,529 lives, prevent 442,000 injuries and eliminate $22.2 billion dollars in damages caused by highway crashes.

Research Coordinated

To coordinate research efforts, government officials, university researchers and industry experts formally incorporated in August the nonprofit Intelligent Vehicle-Highway Society of America Corp.

"What we are trying to do is set up a mechanism to coordinate all the IVHS activities," says Lamm, who has agreed to be IVHS of America Corp.'s unsalaried president. "There is no shortage of research and activities. What we have lacked is any mechanism to tie them all together."

Will all this lead to Robocar's chauffeuring its otherwise-occupied occupants down busy highways?

"If we ever get to that stage, it is going to be middle of the next century," Lamm predicts. "I wouldn't want to bet against that because it is difficult to forecast, but it is far off in the future."

And there are more pressing problems down the road, particularly some involving the "human factors," Lamm maintains.

"I am sure there is going to be a good deal of research, both into whether operators will accept a particular feature, and whether they will use it, or whether it brings in some other problems, such as loss of privacy or a sense of Big Brother controlling everything," adds Lamm. "I think a lot of the concepts might work, but human nature won't permit them to. Part of the problem with trying to get safety improvements in place is that the average driver doesn't feel an accident will happen to him."

Robocar Amuck?

Some people undoubtedly will worry accidents will happen — and that they will be caused by new-fangled devices. Near the beginning of the movie *Robocop*, an ungainly robot designed to do police work illustrates the perils of electronic gadgetry. Pointing a gun at an armed executive who is helping to demonstrate its capabilities, the machine says, "You have 60 seconds to put down your weapon." The executive drops his gun, but the robot doesn't notice, issues another warning and then riddles the executive with bullets.

Similarly, even Robocar's enthusiasts worry that turning over more control to electronic systems might encourage human drivers to pay less attention and might pose the risk of 200-car accidents.

A German-engineered car with video cameras mounted on the roof shows the hazards of letting the computers take over. The car's equipment keeps track of the edge of the road well enough to turn corners without help from the driver. But unforeseen obstructions, even something as common as a parked car, can plunge the circuitry into confusion and send the vehicle heading for a collision.

And even if the systems work flawlessly, motorists may not like the idea of having their speed and locations monitored by government agencies, including, presumably, the police.

FADE IN. ESTABLISHING SHOT. Robocar is on the expressway in a caravan of drowsy commuters vaguely watching video display screens, but not the road. The commuters are barreling along at 80 miles per hour. CUT TO: The basement office of a disgruntled computer hacker who has managed to penetrate the security of the traffic control system. The hacker grins as he prepares to execute his plan for sending a tidal wave of Chicago area commuters roaring into suburban Schaumburg. CUT TO: The expressway. Confusion reigns. Robocar is stalled behind a 300-car crash. FADE OUT.

Modest Claims

Lamm doesn't think Robocar is likely to cause massive crashes, but he does think it's important not to oversell the concept.

"If someone were to inflate the benefits of IVHS at an early stage and sell the principle to Congress or someone else, based on unrealistic evidence, that would eventually be a severe problem to overcome," he explains. "We are very conscious of not promising the world."

Clarence M. Ditlow III, who heads the Center for Auto Safety, says there is no point in expecting the world from new technology when the public hasn't been willing to pay for contemporary technology and maintenance of existing infrastructure.

"If you don't have anti-lock brakes, then it is premature to talk about radar brakes," says Ditlow. "I am very skeptical about putting sensors into roads if we don't have money to make sure bridges are adequately inspected and maintained."

Nevertheless, Robocar doesn't seem so far in the future in places such as Los Angeles, Minneapolis, Orlando, the northwest suburbs of Chicago, London, Tokyo and West Berlin. In each place, experimental programs are proposed or under way to see how Robocar can help make driving safer and less time-consuming. Transportation officials in the New England states are forming a consortium to study a system of their own.

The Basics

IVHS systems include four basic components:

- Advanced traffic management, such as computerized traffic signals.
- Advanced drive-information systems.
- Advanced vehicle-control systems.
- Commercial vehicle operations, which include weigh-in-motion equipment for trucks, vehicle identification and on-board computers for trucks.

"We are very conscious of not promising the world."

Much of the attention now is focusing on advanced drive-information systems, which primarily are geared to smoothing traffic flow, although engineers believe they will have a significant safety payoff, too.

The most advanced effort is in Europe. There, two organizations with complicated acronyms are funding research. One is PROMETHEUS (PROgram for European Traffic with Highest Efficiency and Unprecedented Safety), a seven-year joint effort of European governments, 14 automakers and 70 universities and research institutes. The other is DRIVE (Dedicated Road Infrastructure and Vehicle Safety in Europe), which is more government-oriented.

European planners envision whole platoons of computer-controlled Robocars zipping along highways at 90 m.p.h. with little risk of running into each other.

Recent Experiments

PROMETHEUS' and DRIVE's biggest effort so far has been their association with the experimental Ali-Scout and Autoguide systems.

In West Berlin's Ali-Scout, 700 kilometers of city streets have been wired with 250 infrared roadside beacons. A similar system with five beacons and 15 test vehicles called Autoguide went into operation last year in London. In each city, the roadside beacons monitor traffic flow and send data about accidents or other delays to a central computer, which in turn relays the information to on-board computers in test vehicles. The system tells drivers the best route to avoid traffic tie-ups and even recommends lane changes.

So far, officials say Ali-Scout has reduced travel times by 10 to 20 percent. The systems in both London and West Berlin are to be expanded to include approximately 300 beacons and 1,000 test cars each. Other cities in France, Italy and Germany are scheduled to join the test early in this decade.

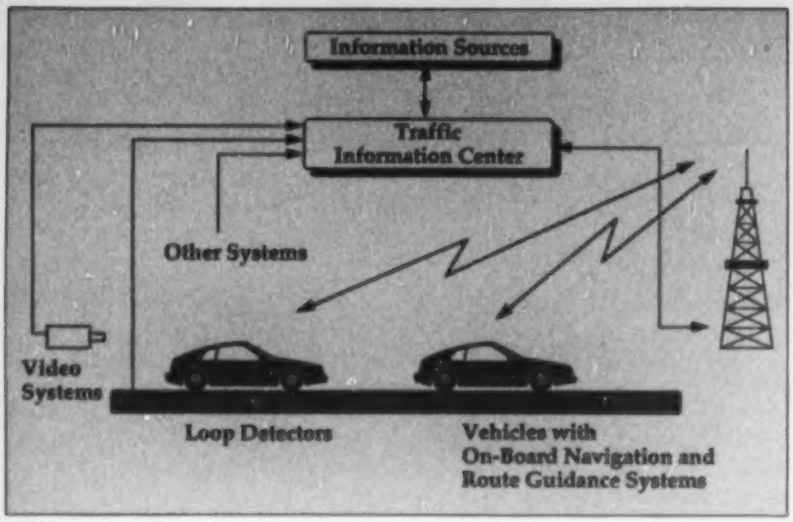
Test Driving Robocar

What is it like to drive an "Autoguided" Robocar?

An arrow on the instrument panel indicates the best direction to follow toward your destination. As you approach an intersection, a computer-synthesized voice tells you: "Left turn ahead." A bar graph on the instrument panel — representing the distance to the intersection in 30-meter intervals — gets shorter and shorter until it is time to turn.

Meanwhile, the central Autoguide computer monitors your car's progress. If it takes longer than usual to get where you are going, Autoguide interprets that as a traffic delay and directs other traffic along alternate routes.

Lyle Saxton, traffic systems division chief of the Federal Highway Administration, says he was impressed by a test drive of Ali-Scout, which is virtually the same system as Autoguide. Saxton says he was challenged by the Germans he was visiting to


Information Sources
Traffic Information Center
Other Systems
Video Systems
Loop Detectors
Vehicles with On-Board Navigation and Route Guidance Systems

An overview of the Intelligent Vehicle Highway System shows how sensors feed data to the traffic information center, which analyzes it and transmits instructions to Robocars on the road. (Schematic: Motorola Inc.)

drive them to a restaurant for lunch with no help other than having the destination punched into the vehicle's computer.

"I thought the system was pretty darn good," explains Saxton. "I was able to use it pretty effectively, and we did get to lunch."

Besides Autoguide and Ali-Scout, researchers are exploring rival systems, including some that use a compact disk to store electronic maps. And officials in the Netherlands have proposed putting microchip identification in cars that would tote up highway tolls for Robocar as it passed mileage markers. (In the United States, highway officials believe such a system could eliminate the numerous accidents around toll booths.)

U.S. Lags

In Japan, a smaller Autoguide-like program is being tested in and near Tokyo. But in the U.S., Robocar remains somewhat more primitive. In 1970, Congress terminated the development of an electronic guidance system, allowing Europe and Japan to take the lead in creating navigational networks.

But this year, a proposal is before Congress for funding of up to $35 million for a new intelligent-vehicle simulator that would speed development of Robocar features. The move toward navigational systems in the United States received another boost last April, when U.S. Department of Transportation Secretary Samuel K. Skinner announced an $8 million year-long test in Orlando of a 100-car system called TravTek, which will go into operation in 1992. TravTek will comprise 100 cars with on-board navigational systems that will be rented to tourists and residents who drive frequently. The computer screens in the cars will point out the least-congested routes, steering drivers away from construction and accident sites.

How can we put sensors in roads if we can't maintain bridges?

In Chicago, researchers at Northwestern University, Motorola Inc. and the Urban Transportation Center at the University of Illinois at Chicago have put together a plan to get smart cars on the arterial streets in Chicago's northwest suburbs. As many as 4,000 motorists will be involved in the five-year project at a cost of about $1,000 per vehicle. The computer system would use satellites, central traffic computers and 1,800 sensors already in place on Chicago area expressways in a network of sensors that is undergoing a five-year, $15 million expansion and upgrade.

Leading Experiment

The most advanced program in the U.S. is Project Pathfinder, a $1.6 million project by General Motors, the California Department of Transportation (Caltrans) and the Federal Highway Administration.

The Pathfinder experiment, the first phase of which became operational this year, includes 25 test Oldsmobiles that use a navigational system coordinated by a central computer. The cars will receive data about traffic conditions along some 12 miles of the Santa Monica freeway and five parallel arterial streets.

Caltrans officials hope to expand the program, which they believe would ease congestion, but that won't happen until a substantial number of people are prepared to pay for installing the equipment in their cars. Caltrans also is researching other Robocar features, including battery-powered message chips embedded in pavement that could communicate directly with passing autos. The chips could relay information about road work ahead and even do the work of billboards, passing on data about nearby restaurants, gas stations and lodging. Such a billboard system will be part of Orlando's TravTek.

"Once we have the basic electronic building blocks in place, we can go on to add new capabilities," former General Motors Chairman Roger B. Smith said in a California speech last year. "How would you like your screen to give you information on parking lots, police and service station locations and scenic routes? How would you like to be able to send out an emergency signal if you have a breakdown? (Or in case of an accident, have that happen automatically, the moment your airbag sensor is activated)?"

Self-Contained Options

People who think centralized computer traffic control just won't happen have options because some Robocar features are entirely self-contained. A Menlo Park, Calif., company called Etak has developed electronic street maps stored on compact disks that are being marketed by Blaupunkt, a U.S. division of Germany's Robert Bosch. The system, called the TravelPilot, uses a compass, wheel sensors, a computer in the trunk and a dashboard monitor to show motorists where they are. Rather than relying on roadside beacons, the TravelPilot uses "dead-reckoning" to pinpoint a motorist's location — which means keeping a record of the starting point, speed and direction. The destination — supplied by the driver — is shown as a blinking star on the monitor's map. The direction from the car and the distance to the destination are shown at the top of the screen. (Pathfinder uses adapted Etak gear.)

Etak sold 2,000 units of a previous model, and Blaupunkt is selling the new TravelPilot "in the $3,000 range," says Ann Badillo, Etak's marketing manager.

The TravelPilot isn't alone. Toyota has sold thousands of navigational systems (packaged with a color TV) in Japan on some of its luxury cars. Other companies are developing navigational systems that use signals from satellites rather than roadside beacons. Navigation systems based on satellites have had to cope with space-program delays, high cost for receivers and poor performance in urban areas, where buildings often obstruct the signals. Yet another option is Loran-C, a land-based radio navigation system originally developed for maritime uses. Loran-C will cover the continental United States early in this decade.

People don't believe a crash can get them.

FADE IN: Robocar is seen rolling home at the end of the day. The city's computerized sensor system hasn't been fully funded, but Robocar has its own compact disk system and numerous other self-contained safety features. The ride home should be uneventful. SHOT FROM CHOPPER: *Expressways flowing smoothly.* CLOSE UP: *Driver's hand entering new destination in Robocar's system — the new car dealer. The newest cars have even more updated features, and Robocar's owner wants one.* FADE OUT.

Whatever features wind up in the next generation of Robocars, Francis B. Francois, executive director of the American Association of State Highway and Transportation Officials, believes they will help make roads safer, even if they do nothing more than alert drivers to hazardous situations and traffic problems.

"Better informed motorists should be able to make better decisions, and this in itself should reduce accidents," Francois concludes.

TWO-WAY STREET

Out of Mind

Your magazine often has articles about how to reduce deaths and injuries to highway construction workers, but one point is always left out. While it is always mentioned that construction sites should be properly marked with warning and speed signs, nothing is ever said about how often such signs should be posted along the construction site.

I have traveled hundreds of thousands of miles on highways and passed countless road construction sites. All I ever see is a one-time warning, "REDUCE SPEED, CONSTRUCTION AHEAD," followed by one more sign further up the road giving the safe speed limit.

I might travel miles along the construction site and never see another speed limit reminder.

While the initial reaction to signs is to reduce speed, "out of sight, out of mind" takes over, especially when the construction site is miles long. Drivers invariably increase their speed in accordance with their own perception of the dangers they see, and do not relate to anything they passed thousands of feet back.

I think it would be a great safety factor to have speed signs posted more often along highway construction sites, such as every thousand feet. If it helps reduce construction site accidents from through traffic, it certainly would be worth the added cost.

William J. Holdorf
Albuquerque, N.M.

Any Comments?

"Two-Way Street" is *your* forum; a place for ideas and opinions on issues important to traffic safety professionals as well as comments about articles in previous issues of TRAFFIC SAFETY.

Please address letters to "Two-Way Street," TRAFFIC SAFETY Magazine, 444 N. Michigan Ave., Chicago, IL 60611.

Letters may be edited for clarity or because of space.

Driver Education

I recently read Brian O'Neill's article in the September/October TRAFFIC SAFETY, "ANTI-High School Driver Education."

I think that O'Neill fails to recognize one reality — what would the statistics look like without high school driver education?

Gig Specht
Vice President
Loss Control
Lockton Insurance Agency
Prairie Village, Kan.

Survey Response

Responding to a recent TRAFFIC SAFETY survey, Rebecca Seiden, director of the North Louisiana Safety Association in Shreveport, observed that people in her area have become distinctly less tolerant of drivers under the influence of alcohol.

She thinks that alcohol-server training may be having some positive effects, but cooperation from bar owners as well as managers remains "limited."

Answering another survey question, she said that police may be more likely now to consider their own driving behavior as an example to the public.

Checking Up On Checkpoints

Is it better to nab drunk drivers or nip their sips?

LAST JUNE the U.S. Supreme Court ruled that police do not violate the constitutional rule against unreasonable searches by setting up checkpoints to catch drunk drivers.

Around the nation, state courts had been divided on the issue. Some said the roadblocks were legal, others found them unconstitutional.

The state courts reflected a difference of opinion among traffic-safety professionals over whether the roadblocks are an efficient use of police personnel and other resources.

The NO argument points out that roadblocks catch few drunk drivers compared to the large number of officers required to staff them. Regular patrols result in more arrests.

The YES argument says that doesn't matter. The important thing is that roadblocks publicize the issue and make drivers avoid drinking for fear of getting caught.

We'd like your opinion, based on your experience as a traffic-safety professional.

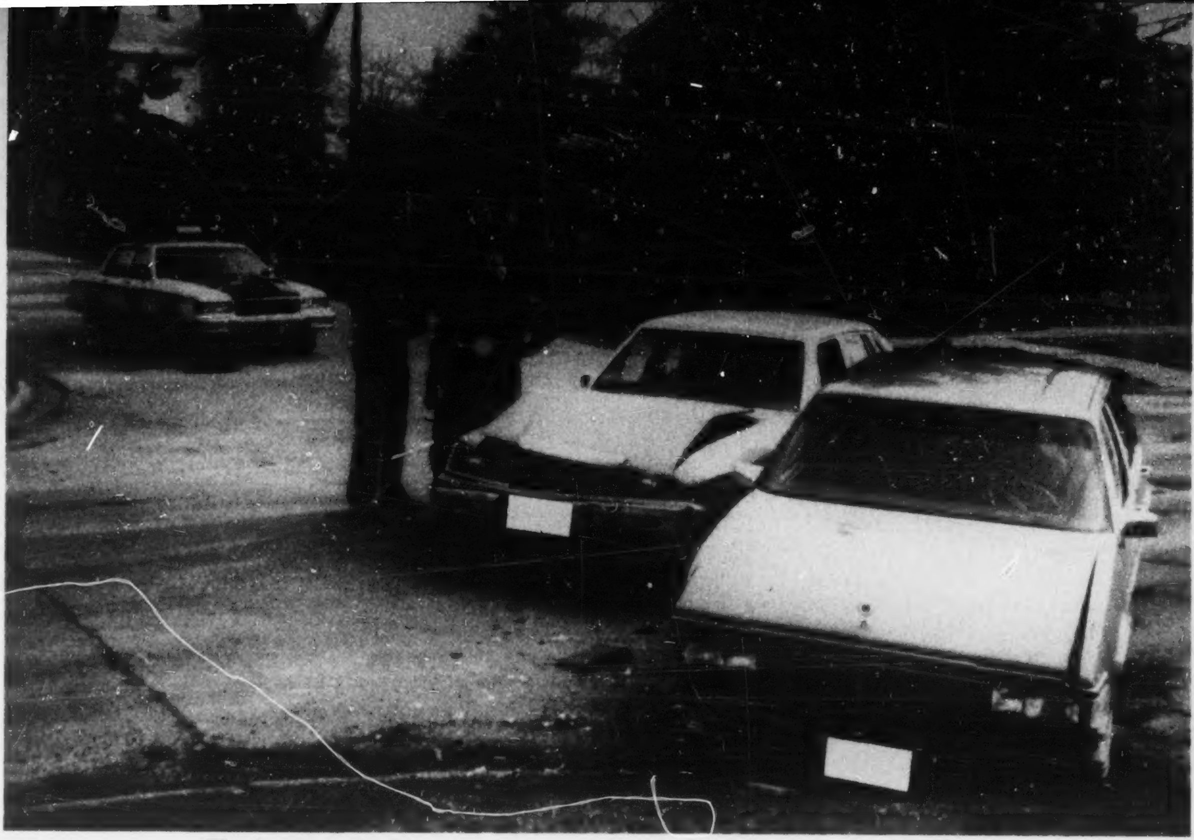
You can just tear out this page and send it in. Or if you have to share your copy of TRAFFIC SAFETY with others, you may want to photocopy the page. Then, if we haven't provided enough space, you can write additional comments on the back.

We'll publish what we find out in a future issue.

Mail your responses to:

TRAFFIC SAFETY Survey
National Safety Council
444 N. Michigan Ave.
Chicago, IL 60611

	Agree	Undecided
1. Police should use their power to expand the use of roadblocks to deter drunk driving.		
2. Police should not waste resources on roadblocks when they could be catching more violators by other means.		
3. The public will be likely to support wider use of roadblocks to make roads safer from drunk drivers.		
4. Wider use of roadblocks that may be perceived as adding to traffic delays and the other hassles of modern life may erode public support for traffic law enforcement.		
Comments:		



The frequency of collisions at quiet neighborhood intersections is another example of how drivers become overly complacent in familiar surroundings or with familiar vehicle signal lights.

Familiarity Breeds Crashes

How many brake lights does it take to protect rear ends?

BY MICHAEL MALONE

IF ONE BRAKE light is better than none, then perhaps two are better than one. What if we place an additional light at eye level? Let's try different colors. Red? How about amber?

The value of brake lights in reducing traffic accidents is indisputable. But how far can safety professionals go in lighting up vehicles before being confronted with the ancient truth demonstrated by Aesop's fable about the fox and the lion: "Familiarity breeds contempt."

In 1986, the federal government mandated that all new passenger cars be equipped with center high-mounted stop lamps (CHMSL). This third brake light (in addition to two lower-rear brake lights usually part of the running light/back-up light configuration above the rear bumper) is most often mounted inside the rear window at bottom center. In combination with the previously standard brake lights, the CHMSL creates a triangular configuration when the brake pedal is depressed.

Center brake lights seem to be reducing crashes.

The effectiveness of this feature has been borne out by preliminary studies. A report released by the National Highway Traffic Safety Administration in May, 1987, compared "relevant" rear impacts of 1985 model cars (90 percent of which did not have CHMSL) and 1986 model cars which were all equipped with the new lights. The cars with CHMSL were 22 percent less likely to be struck in the rear while braking than cars without the eye-level brake light. CHMSL-equipped cars were also less likely to be involved in chain collisions. The effectiveness of CHMSL was about the same in large cities, suburbs and non-metropolitan areas.

Better Ideas

In an effort to take a good idea and make it better, refinements and additions to the CHMSL are being tested and marketed. As noted in the September/October, 1989, issue of TRAFFIC SAFETY, the development of the Advance Braking Light Device (ABLD) could enhance the effectiveness of CHMSL by giving advance warning of a driver's intention to brake by lighting the CHMSL as soon as the driver begins to decelerate.

Working directly through the existing CHMSL, the ABLD activates the brake lights for one second if the accelerator release exceeds a predetermined maximum. In an emergency braking situation, the milliseconds of extra warning time provided by the ABLD may be enough to avoid a serious collision.

Another, more involved system is currently being marketed to transit bus operators. Called the Deceleration Alert System (DAS), it brackets the standard CHMSL with two amber lights. The amber lights are activated when the bus is started and go out as soon as the accelerator is depressed.

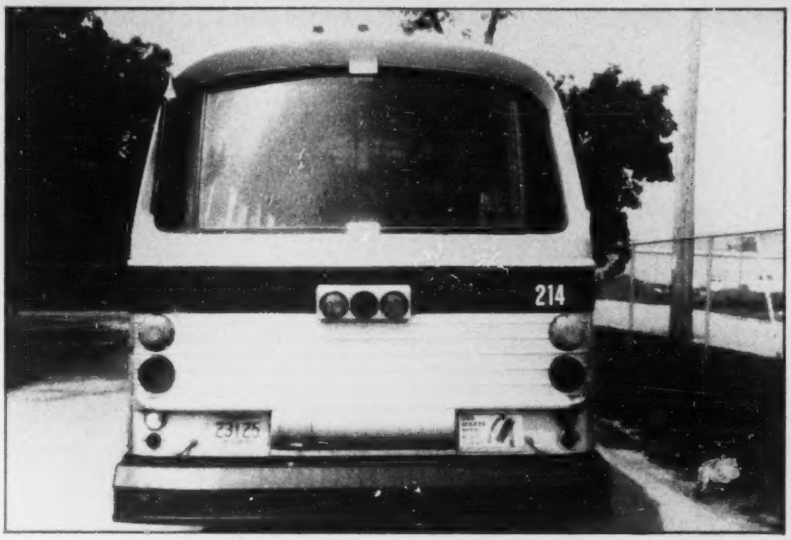
When the accelerator is released, the amber lights are illuminated and remain on until the bus begins to accelerate again. If the brake is applied, the amber lights go out as the red brake lights go on. If the brake is continually applied for more than three seconds, the amber lights begin flashing at 60 cycles per minute.

Safety Development Systems, a division of Haines Commercial Equipment Company, which has manufactured and marketed one type of DAS for ten years, claims to have a system that "takes the CHMSL one step farther and has been proven to cut rear-end accidents in transit buses by over 84 percent," according to Michael J. Rasmussen, vice president for transit relations. "The Deceleration Alert System is currently being used by transit properties across the nation."

Light Up

Perhaps the easiest way to improve on the safety value of vehicle lights would be, simply, to use them all the time. The most low-tech and inexpensive example of the concept, "if you've got it, flash it," is the use of daytime running lights. A simple switch automatically activates low-beam headlights and parking lights as soon as the vehicle is started; these lights automatically go off when the engine is turned off. It is essentially the same concept already in use for motorcycles.

One Canadian study suggests that this simple idea just might be a quick and inexpensive way to further reduce traffic accidents.



One scheme to keep drivers from running into the vehicle in front of them when it stops suddenly is the Deceleration Alert System. Amber lights flanking the center brake light flash on the instant the bus driver lets up on the accelerator. The following driver can begin to respond that much sooner.

Taking advantage of an extensive database (the Traffic Accident Information System) maintained by the Saskatchewan Highways and Transportation Office, a test was conducted using the 4,000 vehicles owned by the Provincial Central Vehicle Authority (CVA) of Saskatchewan.

Deceleration alert provides extra warning time.

The entire fleet was equipped with automatic daytime running lights (DRL). Two year's experience with DRL was compared to the previous six without DRL.

Study Results

Gordon A. Sparks and Russell D. Nuerdorf prepared the study for the CVA and limited the data to accidents with damages of more than $500. According to their written summary, the study further narrowed the field of interest. "Through a systematic breakdown of the total accidents with damages greater than $500, a profile of accidents that would be affected by the use of DRL, namely multiple-vehicle daylight accidents, was obtained.

"This profile classified the DRL related accidents by number, by severity, by cost and by accident configuration. It was on this accident profile that a detailed statistical analysis was conducted."

Overall, the study found there to be a decrease of 7.9 percent in multiple-vehicle daylight accidents in the fleet as studied. Over the same period of time, other types of accidents involving fleet vehicles remained about the same.

The study concludes, "Daytime running lights have a positive, statistically significant impact on the number of multiple-vehicle daylight accidents . . . It is expected that a comparable positive impact would be observed in the total Saskatchewan vehicle population . . . with the increased use of daytime running lights."

Certainly a look at the experience of other experiments (summarized in the report issued by the Saskatchewan Traffic Safety Services Department) using DRL would support this conclusion. Various fleets of trucks, buses, cabs and passenger cars have experimented with DRL for more than 20 years with favorable results.

Since the end of 1989 every new vehicle sold in Canada has been legally required to be equipped with an ignition link that keeps head and tail lights on whenever the car is running.

But Wait

Case closed? Not until a study prepared for the AAA Foundation for Traffic Safety is considered. The laboratory experiment ("Familiarity Effects of Daytime Rear Running Lights"), conducted in 1988, used simulators to test braking reactions to lead cars equipped with CHMSL or CHMSL plus a rear running light. The amber running light was mounted on top of the CHMSL.

The earlier tests, which had suggested the addition of this type of rear running light might improve reaction time for following drivers, used a single trial per subject in on-the-road tests.

The AAA study aimed at testing reaction time over a number of trials and added other variables, such as lighting conditions, type of highway and the subject's age.

With the exception of the first test, the CHMSL alone elicited faster response times than the CHMSL-plus-running-light. One explanation for the failure of rear running lights to improve reaction time overall is that the novelty of the additional running lights quickly disappears.

A novelty effect may dim the value of daytime running lights.

The researchers suggest that the previous high marks given running lights in studies of fleet use also might be due to the novelty effect, since only a small percentage of vehicles on the road use daytime running lights. They point to initial fleet studies which show CHMSL reducing accidents by as much as 54 percent, when operational experience shows a much lower accident reduction of 22 to 25 percent.

Weak Performance

The most disturbing finding might have been the very weak performance of the CHMSL-plus-running-light during the simulated night driving experiments. The combination lights scored much lower than the CHMSL alone. According to the research team, at night ". . . the relative slowness (of driver response) in the running light condition was especially pronounced."

The driver following a car with the CHMSL-plus-running-light views a constant triangular configuration of lights, with the only difference being a change from amber to red when the brakes are applied. With CHMSL only, the braking change is much greater — two tail lights followed by the triangular configuration of light.

The AAA study was limited to one particular application of running light (mounted above the CHMSL) and did not test for the effect of daytime running lights in avoiding all types of multi-vehicle accidents during daylight hours. However, the existence of a novelty effect which would produce greatly reduced reaction times after the initial test leads the researchers to suggest that additional studies be conducted using actual on-the-road experiences.

Catch 22

This conclusion points out a Catch 22 of testing for braking reaction. The AAA study used simulators because of the difficulty in getting more than one reaction time to a braking car on the highway. (The subject in the following car wearies quickly of the game and changes lanes, passes or otherwise avoids the test car.)

On the other hand, simulators have their own built-in bias, as pointed by George T. Taoka, writing in the March, 1989, *ITE Journal*: "Most [braking] experiments have involved the testing of drivers who were forewarned that their brake reaction times would be recorded.

"These studies therefore, measured brake reaction times under anticipatory conditions, which are shorter than the values that would be expected under normal driving conditions. The values that would most closely resemble normal driving conditions are those that are measured for drivers who have not been alerted as to the exact instant when braking will be required."

Comparing various experiments, Taoka concludes that those which test the reaction time of a driver in a following car to the braking by a driver in a lead car are the most reliable indicator of true reaction time.

The difficulty of testing for true braking reaction time because of interference from the novelty effect leaves the real long-term value of various lighting schemes still somewhat in the dark.

A Crucial Millisecond Sooner

If daytime running lights or early-warning deceleration and braking lights can give a driver a few milliseconds more reaction time, antilock braking systems (ABS) become even more effective. The ABS sends data from sensors to an on-board computer which regulates the spin of the wheel to maintain traction and avoid wheel lockup.

While not required by the federal government, as air bags are, a growing list of cars are equipped with ABS as standard or optional equipment. There are currently 80 models that offer ABS.

ABS Standard

Audi: 100 Series, 200 Series, 90 Series, Coupe, V-8 Sedan. BMW, all models. Buick Reatta. Cadillac: Allante, Brougham, Fleetwood. Chevrolet: Caprice, Corvette. Ford: Aerostar Van, Bronco, Thunderbird Turbo. Lincoln: Continental, Mark VII. Mazda: 929S, MPV. Mercedes, all models. Mercury: Cougar ZR7, Sable. Nissan 300ZX. Olds: 98 Touring Sedan, Trofeo. Pontiac: Bonneville SSE, Grand Prix STE Turbo. Saab: 900, 9000. Toyota: Lexus LS400, Lexus ES250. Volvo: 740 Turbo, 760 Turbo, 780, 780 Turbo.

ABS Optional

Acura: Legend, Integra. Audi 80 Series. Buick: Electra, Le Sabre, Regal, Riviera. Cadillac: De Ville, Eldorado, Seville. Chrysler: Fifth Avenue, Imperial, New Yorker. Dodge Dynasty. Ford: Probe, Taurus, Thunderbird. Honda Prelude. Lincoln Town Car. Mazda 929. Mercury Cougar. Mitsubishi: Galant, Sigma. Nissan: 240SX, Maxima. Olds: 98, 88, Cutlass Supreme, Toronado. Pontiac: Bonneville, Grand Prix. Subaru Legacy LS. Volvo: 740, 760.

Police Officer Sarah Nicholson leads a group of children from the outdoor part of Safety City (note traffic markings on playground pavement in background) to additional activities inside the Mary McLeod Bethune School.

Making Kids Truly Street Smart

How New York City is saving its children from its drivers

BY MICHAEL ELDRITCH

HERE'S A WORST-CASE scenario that could have been written by a horror specialist like Stephen King. The potential victims are little kids. The menace is provided by the motorists of New York City, notorious for parking triple, ignoring traffic signals and chivvying cocker spaniels down sidewalks, uptown, downtown all around the town.

A start toward a happy ending is being made by the New York City Department of Transportation and the New York City Board of Education with their new Safety City Program.

The program is built around an actual Safety City, an outdoor, simulated environment outside the Mary McLeod Bethune School (P.S. 92) in Harlem's Community School District 5. It includes a street and intersection, pavement markings, traffic and pedestrian signals, street signs and other "street furniture."

It's a place where third-graders learn how to cross streets, operate bicycles and ride in cars safely. Other elements of the program include:

Indoor Learning Center

A classroom serves as a traffic-safety learning center, complete with video equipment and up-to-date learning materials.

Theater Performance

All kindergarten-through-third-grade children in District 5 are invited to see a traffic safety musical theater performance. Accompanying workbook assignments reinforce the lessons of the show.

Vehicles are the worst threat to New York kids.

Special Curriculum

In addition to specially trained instructors for on-site visits, third-grade classroom teachers, trained in the new Safety City curriculum, provide student preparation and follow-up. Also, a larger group of kindergarten-through-sixth-grade teachers will be trained in "Starting Early," a traffic safety/alcohol and drug awareness classroom curriculum.

Speakers' Bureau

Police officers, traffic enforcement agents and health-care providers are available to visit classes throughout the school year to highlight concepts learned at Safety City.

Community Participation

Parents and volunteers are encouraged to assist with activities at Safety City. As the program expands, a variety of opportunities will be available for broader participation by the Harlem community.

Student Internship

Junior and senior high school students are encouraged to serve as role models and assist with operations at Safety City. In future years, graduates of the Safety City program can return as interns and volunteers.

Evaluation

The Harlem Hospital Injury Prevention Project assists in evaluating the program's effectiveness.

The Threat

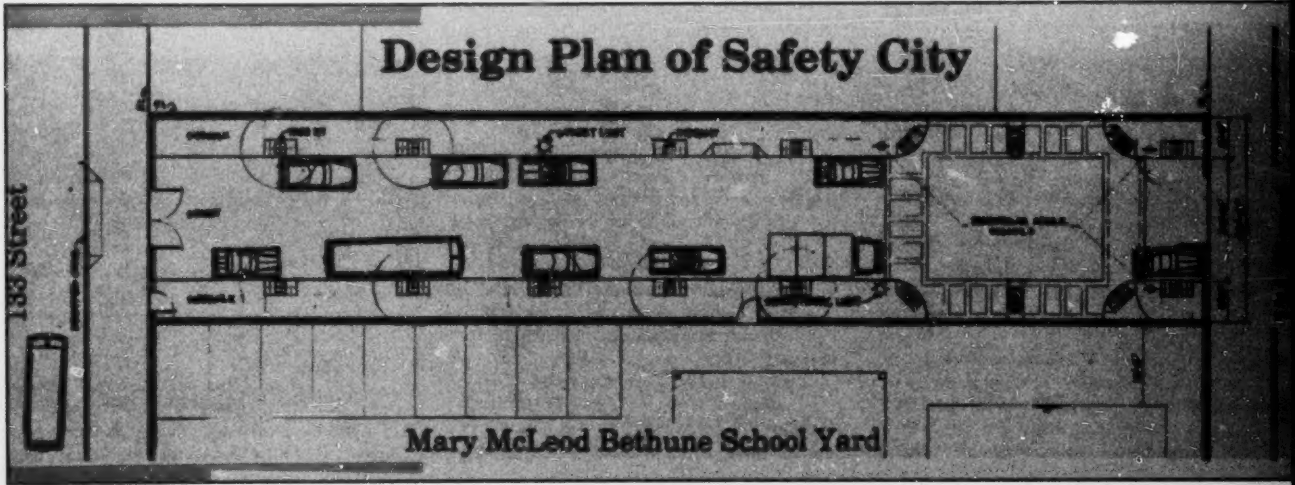
Motor vehicle crashes are, by far, the leading cause of accidental death to New York City children between five and 14 years old. In addition, approximately 3,500 youngsters in this age group are injured each year on the city's streets. Bicycle and motor-vehicle collisions accounted for more admissions to Harlem Hospital's Pediatric Trauma Unit in 1988 than any other type of injury.

Children today are more mobile than ever. They walk to and from school, ride in cars and buses and use bicycles, frequently without the protection of an adult. According to health experts, young children are at highest risk on the streets:

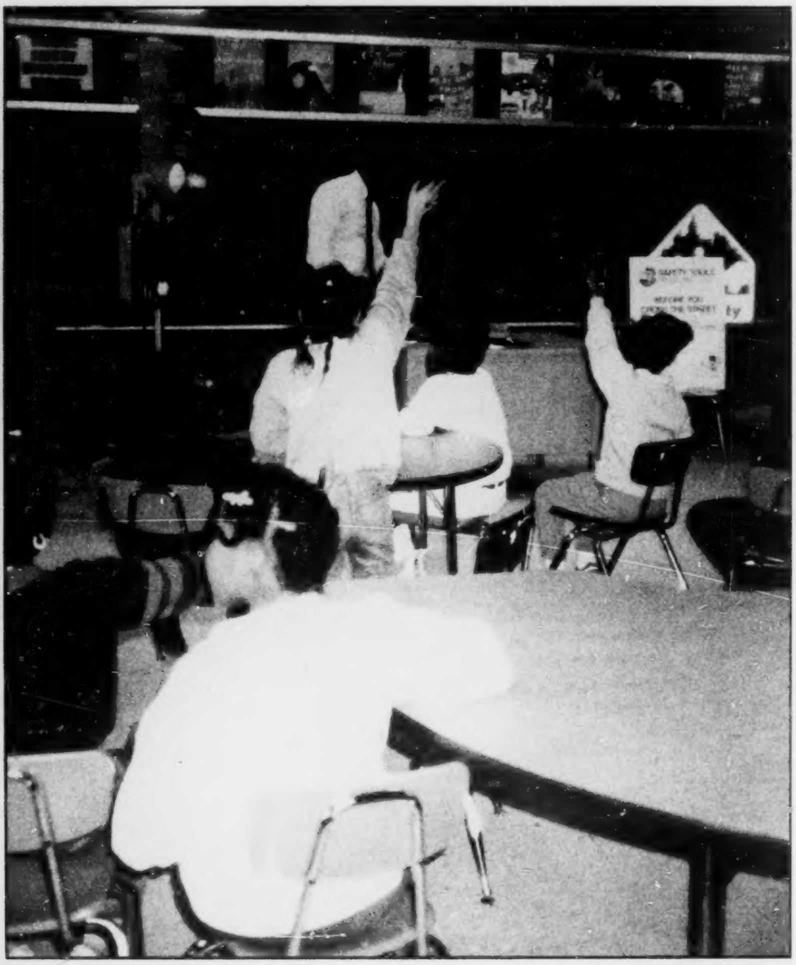
- They believe that if they can see a driver, the driver can see them.
- They think cars can stop instantly and that cars are "friendly."
- They cannot tell exactly where sounds come from.
- They cannot judge the speed of traffic.
- Their field of vision is one-third that of adults.
- They do not recognize or react to dangers they have not experienced.

Traffic safety training, to prevent deaths and injuries, must start early in life. The Safety City Program is a comprehensive traffic safety educa-

Third-graders are at the best age to learn traffic safety.


Design Plan of Safety City

In New York City, crossing between parked cars is a fact of life. Traffic enforcement agent Virginia Prezzy shows children how to use their safety tools: eyes, ears, decision-making power.



Instructor Ronald Whittaker plays the "City Sounds" audio tape, designed to help children hone their listening skills.

tion strategy that helps children learn how to make safe decisions when they cross streets, ride in cars and drive bicycles. The learning-by-doing method used at Safety City keeps students looking, listening, talking, examining, touching and singing. As active participants in the education process, children internalize behaviors that will help keep them safe for a lifetime.

Several important principles guide the curriculum of the Safety City Program. They are by no means unique to traffic safety education.

Building Self-Esteem: A child who feels good about himself will make healthier lifestyle choices. In addition, he will be better able to resist negative peer pressure. Gaining knowledge — especially learning how to handle difficult situations — builds self-confidence. Using that knowledge to protect oneself and others fosters feelings of empowerment and self-worth.

Taking Responsibility: At Safety City, students learn about safety as a decision-making process. Children do not memorize absolute rules. Rather, they identify "tools" — knowledge and skills that help them be safer if they choose to use them. Assertion is knowing when and how to preserve one's right to be safer.

Helping Others: Safety City children are encouraged to share their traffic-safety knowledge with friends, family members and others in their community. The curriculum helps children to know when, where and how to intervene for the benefit of another.

Knowing the Environment: The sights and sounds of the city provide a wealth of information and behavioral cues if we are attuned to them. When children open their senses — seeing, hearing, touching and smelling — they become "safety sensitive."

Teacher's Role

Classroom teachers are vital to the success of the Safety City Program. The benefits students derive from the on-site activities are dependent, in large part, on the teacher's leadership and creativity. Teachers are encouraged to complete all the pre-visit activities and to reinforce each visit's lessons with at least one follow-up activity. In addition, they can incorporate safety themes into other subjects, such as social studies, mathematics and English.

Details

The Safety City Program includes two visits to Safety City. Each visit focuses on a different theme: "What We Can Do To Be Safer" and "What We Can Wear To Be Safe."

Each visit is split into outdoor and indoor activity periods:

Outdoor: Children receive hands-on instruction in a simulated environment, which includes a street and intersection, pavement markings, traffic and pedestrian signals, street signs and other "street furniture."

Indoor: At the Safety City Learning Center, children watch safety videos, create safety artwork and explore safety concepts.

On-site instruction is conducted by a member of the Safety Education Unit of the New York City Department of Transportation, as well as local police officers, traffic enforcement agents and crossing guards.

Also, all Safety City children see "Ring Around a Rainbow: A Traffic Safety Presentation" by The Shadow Box Theatre.

Evaluation is built in to make sure the program works.

Pre-Visit and Follow-Up

The following items are provided by the Safety Education Unit of the NYC Department of Transportation to help carry out the activities:

- "Ring Around a Rainbow" student workbooks and teacher guide.
- Video cassette of "Willie Whistle" and "Safety Belt Rap."
- A City-Sounds audio cassette.
- Safety brochures for family members.
- "Safety Tools" poster.

YES Magazine.

Helping children to help keep each other safe is what YES (Youth Educating for Safety) is all about. *YES Magazine* facilitates the learning/sharing process by publishing student essays, artwork, poetry, stories, cartoons, puzzles and songs. The publication is written by and for New York City children. As part of the Safety City Program, a special junior edition of *YES Magazine* is issued.

The effectiveness and quality of the Safety City Program will be measured in four ways:

Children will take a short quiz prior to the traffic safety theater performance and after their second visit to Safety City.

Teachers will be interviewed by the Safety City coordinator after the second visit.

Harlem Hospital will monitor all intakes at the Pediatric Trauma Unit as an indicator of Safety City's impact in reducing the involvement of children in motor-vehicle crashes.

Children will share the traffic-safety message with playmates, relatives and others, teaching them how to make safer decisions.

Material for this article was supplied by Andrew Scharf, Safety City Coordinator. For further information, contact him at the New York City Department of Transportation, 51 Chambers St., Room 1404, New York, NY 10007; (212) 566-1890.

OSHA Tightens Safety Belts Another Notch

New on-the-job rules to require driver training, too

BY JIM CASTELLI

OSHA HAS proposed mandatory safety belt use and driver training for more than 35 million workers who drive on the job.

Labor Secretary Elizabeth Dole says "once implemented, this standard will save more lives than any other OSHA safety standard."

The National Safety Council has long advocated this approach. Dole and Gerard F. Scannell, assistant secretary of labor for the Occupational Safety & Health Administration, announced plans to develop this proposal at the 1989 National Safety Congress. The National Highway Traffic Safety Administration (NHTSA) also supported it.

Motor vehicle accidents account for 2,100 job-related deaths in the United States each year, according to OSHA. They also account for 91,000 lost-workday injuries. (National Safety Council figures indicate there are 3,900 deaths and 200,000 disabling injuries.)

Dole says the proposal will save 465 to 684 lives each year. She says it will also prevent between 22,221 and 31,635 lost-workday injuries each year.

"More than 36 percent of workplace fatalities are the result of vehicle accidents," Dole says, "and occupant safety belts can prevent nearly half these deaths." Dole first supported mandatory safety belt and driver training programs on the job when she was Secretary of Transportation in the Reagan Administration.

The proposed rule applies to companies with one or more employees. Companies with fewer than 10 employees are exempt from some recordkeeping requirements.

This is what the proposed rule would require:

- All employees must wear safety belts on the job when in cars, trucks or other vehicles in which federal regulations require safety belts.
- Those who ride motorcycles on the job must wear helmets.
- Employers must provide a brief driver safety program that includes vehicle familiarization: safety belt and motorcycle helmet use; and effects of alcohol and other drugs on driving.
- Initial training and a refresher course every three years must be taught by a "qualified, skilled instructor."
- Employees hired after the rule's effective date cannot drive on the job until they take the driver safety course or prove they've had equivalent training in the past three years.

OSHA asked for comment on other issues:

- Should OSHA require vehicle maintenance plans or regular vehicle safety inspections?
- Should OSHA require safety helmets for bicycle couriers?
- Should OSHA handle driver training for employees in industries with frequent turnover, such as construction, differently?
- Would a certificate from a previous course provided by a new employee be sufficient?
- How should OSHA respond to the problem of overloading vehicles with passengers?
- Should there be a requirement to retrofit with additional seat belts, or should the agency prohibit the transportation of workers in any vehicle not equipped with belts?

Comments, in quadruplicate, must be postmarked no later than Nov. 9 and sent to the OSHA Docket Officer, Rm N2634, 200 Constitution Ave., N.W., Washington, D.C. 20210. Specific comments for general industry should be designated S-776-G, for maritime S-776-M, for construction S-776-C and for agriculture S-776-A.

Quicker DUI Revocation

The NHTSA and the National Transportation Safety Board (NTSB) have launched a new coalition to support the use of administrative license revocation in the 21 states that do not now have it. Almost 30 organizations, including the National Safety Council, belong to the coalition.

Administrative license revocation, also known as "administrative *per se*," allows the police to revoke the licenses of drivers who refuse or fail a chemical test for alcohol in the blood without waiting for a court conviction. In some cases, revoking a license can take as little as a week.

NTSB Chairman James Kolstad, says "A situation has developed where known drunken drivers — those arrested for DWI and found to have illegal blood alcohol concentrations — are being allowed back on our roads to drive until a court trial can be held. Many of them are driving drunk again and again with a valid permit in their pockets. This simply has to stop."

Coalition members are pooling resources at the local level to lobby for administrative license revocation laws.

NHTSA says an administrative *per se* law should include the following:

- The arresting officer should serve notice of license revocation, take the driver's license and issue a temporary license which is good until the revocation comes through.
- NHTSA recommends revoking a license for 90 days for first offenders, one year for second offenders and longer for repeat offenders.
- The program should be self-sufficient, relying for income on fines and fees of those drivers whose licenses are revoked.

Supporters of administrative license revocation argue that it is an effective deterrent to drunk driving because it makes the link between drunk driving and a penalty much clearer.

A variety of studies show that administrative license revocation reduces accidents:

- A 1989 study of three states in the West found that two had a significant decrease in recidivism and the third had decreases in the rates of traffic offenses after adopting administrative *per se* laws.
- A 1989 study of 17 states found that the median reduction in fatal crashes was 7 percent.
- A 1988 study estimated that administrative license revocation reduces fatal crashes by an average of 9 percent.
- Crash fatalities in Iowa reached a 40-year low in the first year of administrative *per se*.

The states which do not have administrative license revocation laws are New York, Pennsylvania, Ohio, Michigan, Massachusetts, Rhode Island, New Hampshire, New Jersey, Virginia, Kentucky, Tennessee, South Carolina, Georgia, Alabama. Arkansas, Texas, South Dakota, Nebraska, Montana, Idaho and Washington.

Organizations in the coalition include the American Association of Motor Vehicle Administrators, American Automobile Association, Advocates for Highway and Auto Safety, the Insurance Institute for Highway Safety, American Trucking Associations, the National Association of Governors' Highway Safety Representatives, Mothers Against Drunk Driving, the Motor Vehicle Manufacturers' Association, the Police Executive Research Forum and the National Association of State Alcohol and Drug Abuse Directors.

Deaths Down in 1980s

NHTSA Administrator Jerry Curry says the 1980s were "the most significant decade in the history of U.S. efforts to reduce crash casualties." Curry said the 1989 fatality rate was 2.2 per 100 million miles of travel, "a remarkable improvement from the 3.3 figure registered a decade earlier."

If the 1980 rate had remained constant throughout the '80s, Curry said, 124,190 more people would have died in that time.

There were 45,555 traffic deaths in 1989, down from 53,543 in 1969 and 51,093 in 1979.

Curry credited more widespread use of safety belts and efforts to reduce drunk driving. He cited figures to show reductions in deaths linked to drunk driving:

- In 1989, alcohol-related driving deaths were 11 percent below 1982.
- The proportion of Americans killed in crashes involving intoxicating levels of alcohol fell from 46 percent in 1982 to 39 percent in 1989.
- Among 15- to 19-year-old drivers involved in fatal crashes in 1989, 17 percent had blood alcohol levels above .10, down from 28 percent in 1982.

Curry says use of safety belts and child safety belts saved more than 21,000 lives from 1983 to 1989. He said all 50 states and the District of Columbia now have child safety seat laws and that 36 states and the District have safety belt laws.

A NHTSA program designed to improve traffic safety is the Drug Evaluation and Classification (DEC) program, which trains police officers to recognize when a driver is drug impaired. Curry says, "Studies indicate that 10 to 22 percent of the drivers in serious and fatal crashes have drugs other than alcohol in their system — often in combination with alcohol. NHTSA is training police to identify signs of drug impairment and present the evidence effectively in court."

So far, NHTSA has trained more than 1,000 police officers in 26 communities in 10 states. More than one-quarter of them were trained as instructors, so they can teach others.

The Los Angeles Police Department pioneered the program in 1980 and NHTSA and the National Institute on Drug Abuse have validated it. The program trains police to observe a suspect's appearance, behavior, performance of psychophysical tests, eyes and vital signs in determining whether a driver has used drugs.

Curry says 15 states and Puerto Rico are ineligible for the program because their laws do not allow for more than one chemical test or do not allow testing for drugs other than alcohol.

NHTSA has trained trained police in Arizona, California, Colorado, Florida, Indiana, New York, Nevada, Texas, Utah and Virginia.

EVENTS

Driving Attitudes

NOVEMBER

Hazardous Materials Transportation Training — Nov. 1-2, Las Vegas; Nov. 13-14, Kalamazoo, Mich. — National Safety Council, 444 N. Michigan Ave., Chicago, Il 60611. (312) 527-4800, extension 8407.

Motor Fleet Maintenance Supervision — "Maintenance of Commercial Vehicles, Phase B," Nov. 6-8, University of Alabama; "Maintenance Management," Nov. 27-29, Michigan State University. — Motor Fleet Supervisor Training, Office of Executive Director, A364 Engrg. Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

DDC-Professional Truck Driver — Nov. 26-28, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

Traffic Engineering Academy, Transportation Site Impact Analysis Workshop, Workshop on Traffic Signal Control-Isolated Intersections, Geometric Design Workshop — Nov. 26-30, 1990 and Dec. 2-6, 1991, Evanston, Ill. — Institute of Transportation Engineers, 525 School St., S.W., Washington, DC 20024-2729. (202) 554-8050

DDC-Coaching the Mature Driver — Nov. 29-30, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

DECEMBER

Motor Fleet Maintenance Supervision — "Maintenance Management," Dec. 4-6, University of Delaware — Motor Fleet Supervisor Training Office of Executive Director, A364 Engrg. Bldg., Michigan State University, East Lansing, MI 48824-1226. (517) 353-1790.

DDC-Attitudinal Dimensions of Driving — Dec. 4-6, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

Hazardous Materials Transportation Training — Dec. 5-6, Detroit — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

DDC-8 — Dec. 10-12, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

DDC-4 — Dec. 13-14, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

JANUARY 1991

27th Command and Management School — Jan. 7-March 22, 1991, University of Texas at Dallas — Southwestern Legal Foundation, Box 830707, Richardson, TX 75083-0707. (214) 690-2394.

Hazardous Materials Transportation Training — Jan. 9-10, Seattle; Jan. 16-17, Cleveland — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

Symposium on Work Zone Traffic Control — Jan. 18-19, Orlando, Fla. — Federal Highway Administration, (703) 285-2517; or Bellomo-McGee, Inc., 8330 Boone Blvd., Vienna, VA 22182. (703) 847-3071.

FEBRUARY 1991

Principles of Fleet Administration Safety — Feb. 4-6, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

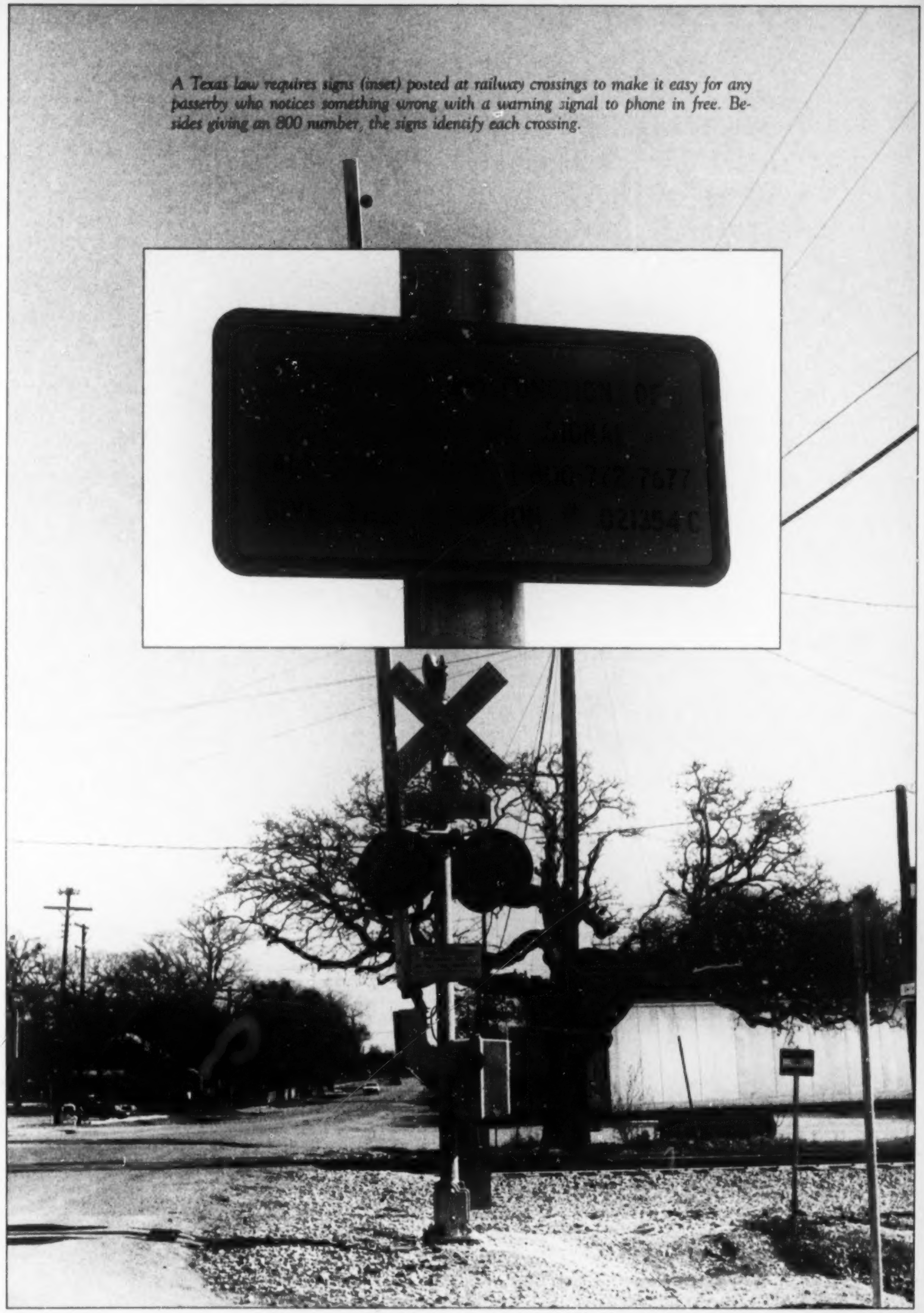
DDC-8 — Feb. 4-6, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

DDC-4 — Feb. 7-8, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

DDC-Attitudinal Dimensions of Driving — Feb. 13-15, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8527.

Hazardous Materials Transportation Training — Feb. 6-7, Minneapolis/St. Paul; Feb. 20-21, Los Angeles; Feb. 27-28, Indianapolis — National Safety Council, 444 N. Michigan Ave., Chicago, IL 60611. (312) 527-4800, extension 8407.

DDC-Professional Truck Driver — Feb. 25-27, Chicago, Ill. — National Safety Council, 444 N. Michigan Ave., Chicago 60611. (312) 527-4800, extension 8527.



A Texas law requires signs (inset) posted at railway crossings to make it easy for any passerby who notices something wrong with a warning signal to phone in free. Besides giving an 800 number, the signs identify each crossing.

Wrong Signals Put Right

Texans call 1-800 to prevent railway crossing tragedies

"THE WRECK on the Highway" isn't just a song to many rural families who live near railway crossings. From time to time they can see something has gone wrong with the crossing warning signals. Even if they phone the sheriff's office, it may take a while for someone to come out to fix the signals. Meantime, there's real danger of a disaster.

Now Texas has found a better way.

A virtually unpublicized state program to report railroad crossing signal problems has contributed to a 24 percent decline in crossing accidents since 1983, a federally sponsored study by the Texas Transportation Institute (TTI) at Texas A&M University found.

The successful Texas program is now being considered for adoption nationally, according to the TTI evaluation of the Texas Railroad Crossing Safety Information Act that created the Texas 1-800 railroad notification program.

The program allows individuals to report, using a toll-free number, any problems of train-activated rail-highway crossing signals to the Texas Department of Public Safety (DPS), which then reports malfunctions to appropriate railroads. Signs with the 1-800 number and a signal identification number are posted on railroad crossings on state highways.

Despite little publicity to promote the 1-800 number, the program averages 400 calls a month. Since the law went into effect in 1983, more than 17,500 problems have been reported.

Railroads Cooperate

The railroads have been glad to cooperate. One railroad official commented: "Since this program has been in effect, our dispatcher's office has received numerous calls, particularly on weekends and late at night, concerning malfunctions. This has permitted us to dispatch a maintainer without delay. Quite possibly, this law has prevented several accidents."

Some police departments and sheriff's offices complained of the lack of publicity. Police found out about the program only when the signs went up at the crossings. Still, the problem solved itself. Police could read the signs as well as the public.

Railway crossing crashes decline 24 percent with new Texas law.

A few police officers said that even under the new program, the railroads sometimes were slow to respond. "I have one crossing that has been reported seven days straight," said one.

But before the new system took effect, that crossing might not have been reported at all because passersby wouldn't have known what to do about it.

Supported by the U.S. Department of Transportation and the Federal Railroad Administration (FRA), the TTI study verified the seven-year program's effectiveness, said study director Jack Lamkin of the TTI Economics and Planning Division at Texas A&M.

Problems Corrected

"More than half of the Texas law enforcement officials we surveyed were not aware of the program either," Lamkin said. "But our evaluation showed the program is being used by the public and the problems they report are being corrected by the railroads."

The program is a cooperative effort involving the state, the public and the railroads, with the common goal of improving railway-highway safety, Lamkin said. The 1-800 program is not a cure-all for railroad crossing problems, but solving signal problems improves the overall system.

"If people call and later see problems corrected, the integrity of the entire system is improved. People have more regard for the warning devices and tend to follow them better. If they think the signals are wrong, they tend to disregard the entire class of safety efforts," Lamkin said.

County Roads Too

The 34 railroads that operate in Texas have 13,747 crossings in the state, but only the 2,002 crossings on state-maintained highways have had signs with the 1-800 number until this year, Lamkin said. The legislature widened the law to include crossings on county roads in the last session.

Calls to the 1-800 number go to special DPS operators who log the calls and location of the signal problem and then contact the railroad responsible for the crossing. More than half of the problems are reported to the railroads in under two minutes, the study found.

However, the collected data from nearly seven years of reports is not being utilized by either the railroads or state safety experts to determine any particular pattern of signal problems, Lamkin said.

More Research

"The early notification program is doing as well as intended, but more work needs to be done in research with the collected data," Lamkin said. "We tried in the study to show ways the data could be used by the railroads and the state to improve grade crossings."

One area the data could be used to improve railroad crossing safety is in non-train involved accidents, Lamkin said. Such accidents occur four times more often than train-vehicle collisions at railroad crossings. Of the 13,875 accidents at Texas crossings from 1980 to 1988, more than half involved no train.

"Motorists are behaving in a way that is not car-train related that is increasing accidents. The 1-800 program data can be used to help find out what it is," Lamkin said.

Improving communication between law enforcement officials and railway maintenance personnel is recommended along with expanding public awareness of the program, Lamkin said. Other recommendations include providing summary reports to railroads to improve their capabilities to implement long-term safety renovations and including all signal crossings in the program.

Surprising number of crossing collisions don't involve a train.

Lamkin noted the FRA had received so many requests nationwide on the 1-800 program it asked him to prepare a slide show for the agency to lend to states seeking information on the program. Delaware — with one railroad and about 12 crossings — is the only other state with a similar program, he said.

TTI officials at Texas A&M are continuing to monitor the information generated through the program, Lamkin added.

MADD Glad

Mothers' group sees its anti-DWI program taking hold

BY ANNE RUSSELL

MOTHERS AGAINST Drunk Driving is an organization with a clear mission, according to national president and spokesperson, Ms. Micky Sadoff.

"Our mission is to stop drunk driving and to support victims of this violent crime," stated Ms. Sadoff. "All our activities derive from these two goals and that's where we direct our energies."

Although the specific wording of MADD's mission statement has changed somewhat over the years, these twin tasks have provided the bedrock of MADD's activities since its beginnings a decade ago.

During the past two years MADD's energies have been increasingly focused on these goals.

On the DWI reduction side, some of this intensity has been channelled through its Impaired Driving Issues program — a combination of training and resources drawing together key state and community leaders and an array of research and traffic safety expertise. MADD notes with satisfaction that the country is beginning to see the results; increasing numbers of states are adopting legislative priorities of the organization, such as the administrative license revocation and lower blood alcohol limits.

Attitude Problem

MADD recognized early that the problem of impaired driving permeates our society, perpetuated by the attitude that alcohol-related crashes are unavoidable "accidents." Through a broad range of public service messages, public awareness campaigns and informational approaches, MADD has fought apathy and other inadequate responses. Educational and special event programs have been especially necessary to reach youth, who are at increased risk. MADD has also supported and encouraged law enforcement at state, local and national levels.

But a major avenue for changing both attitude and behavior remains legislative and public policy.

As grassroots activists from all walks of life, MADD volunteers have frequently come on the legislative scene with great zeal but little or no experience in promoting change through political and governmental processes. By trial and error, through successes and setbacks, experience was gained, only to be lost as advocates burned out or moved on to other pursuits. "Reinventing the wheel" has been a common phenomenon as new members learn the political ropes and must struggle both to promote favorable legislation and defeat those antagonistic to MADD goals.

New committee solves problem of burnout.

In 1987, when the board of directors of MADD formed a legislative and public policy committee, its chairperson was determined to help MADD activists condense some of this learning process. Rebecca Brown, the committee chairperson and mother of a son killed by a drunk driver, had organized a MADD chapter in her county and was instrumental in other MADD "firsts" in her state. One of her primary goals as chair of this committee was to spare other activists from the need to continually start from scratch.

"At the state legislature, I found

myself being cast as the 'expert' on issues I was pressing to reduce impaired driving, when I knew that I needed far more information myself on what really would save more lives," said Ms. Brown. "Most activists then had no clear idea where to go to obtain concise, up-to-date information on the important issues."

Expertise Pursued

Brown went in pursuit of the expertise which could provide answers to her questions and those of legislators, so that she and other activists could say with assurance, "This DUI countermeasure will prevent X percent of drivers from being in alcohol-related crashes and will save X lives."

Consulting with officials in the federal agencies who were knowledgeable about the drunk driving issue, Brown convened an ad hoc task force of 15 or 20 notable experts in the traffic safety and research fields to provide their advice and assistance. MADD brought to them 50 actions or sanctions suggested by their state representatives as worthy goals for MADD.

The task force's goal, as requested by MADD, was to evaluate these proposals in terms of their potential for saving lives from the threat of an impaired driving tragedy. These issues would then be recommended to MADD as public policy priorities.

The Big Seven

Seven countermeasures were identified as a package of measures which would work together to maximize DUI deterrence and save lives. These measures included: administrative license revocation, sobriety checkpoints, self-sufficient (offender-funded) enforcement programs, preliminary breath test use, .08 illegal per se, mandatory BAC testing for all drivers in fatal and serious injury crashes, and license plate impoundment for repeat offenders. Comprehensive resources on each issue were compiled into a volume titled *The Impaired Driving Issues Compendium*.

Workshops bring experts together with officials.

Ms. Sadoff remarked, "The *Impaired Driving Issues Compendium* has been tremendous, because it puts answers about the DWI problem and some key remedies at your fingertips. But even more significant, the training sessions bring together those who can unite to accomplish these necessary changes and foster a greater understanding of MADD and our common goals."

Ms. Brown agreed, and pointed out that recent workshops have drawn the participation of state governors as well as legislators, judges, prosecutors and other key officials. The workshop participants and MADD leaders were welcomed to Harrisburg, Pa., in March by Pennsylvania Governor Robert Casey, and in Annapolis, Md., Governor William Donald Schaefer gave the keynote address on administrative revocation. Illinois Secretary of State Jim Edgar made an appearance at the Chicago workshop, as did Michigan's Secretary of State Richard H. Austin in Lansing.

Series II Workshops

Currently in the midst of Series II of its workshops, MADD is hard at work developing additional volumes of the valuable compendium. Future volumes will deal with youth issues, additional DWI countermeasures and responsible alcohol-serving.

Aside from the professionals who contributed valuable expertise and time to the ad hoc task force, MADD recognizes this important program would never have come about without the assistance of the U.S. Transportation Department's National Highway Traffic Safety Administration (NHTSA), in the form of grants to provide education and resources, as well as extensive consultation. In recognition of that assistance, MADD presented a Public Service Award to the agency's Office of Alcohol and State Programs at MADD's Annual Congressional Reception in February, 1990.

In addition, extensive logistical and resource support has been provided through the National Safety Council.

"This partnership has produced the impetus for tremendous progress in fighting impaired driving. I'm excited about what lies ahead as the program moves throughout the states," remarked MADD's Rebecca Brown. "I am especially pleased to think that five years from now we will be able to see the value of this program expressed in terms of the number of lives that have been spared."

Presenters

Presenters at the workshops have included Dr. James Nichols of NHTSA; John Lacey, Mid-America Research Institute; Dr. Robert Voas, Pyramid Planning; Joel Watne, Minnesota Attorney General's Office; Robert Reeder, Northwestern University Traffic Institute; Victor Colman, Santa Clara Public Health Department, and the National Safety Council's Al Lauersdorf, among others.

Since the Impaired Driving Issues program began, MADD has recognized the contributions made by participants to passage of adminsitrative license revocation in California, Florida, Connecticut, Maryland and Vermont, as well as lowering the "per se" level to .08 in California and Vermont. Other states continue to press for these and additional measures as the program continues. Momentum continues to build as a result of this effort, promising hope for even greater safety on our nation's streets and highways in the years ahead.

'Five years from now . . . we'll see the number of lives spared.'

Anne Russell is assistant director of public policy and governmental relations for the national office of Mothers Against Drunk Driving. She works with the public policy committee of the MADD board of directors on impaired driving issues and federal and state legislation.

Information about MADD programs can be obtained from the MADD national office, 669 Airport Freeway, Suite 310, Hurst, TX 76053. Phone: 817/268-6233.

ACCIDENT FACTS

National Safety Council

1990 FINAL CONDENSED EDITION

ISSUED AUGUST 1990

For the eighth consecutive year, accidental deaths were estimated to number less than 100,000 in 1989. The death total was 94,500, a decrease of 2 per cent from 1988. Deaths by class are shown in the box below. Disabling injuries numbered 9,000,000, including 340,000 that resulted in some degree of permanent impairment—ranging from partial loss of use of a finger to blindness or complete crippling.

DISABLING INJURY TOTALS for the principal classes of accidents were: Motor-vehicle, 1,700,000; public nonmotor-vehicle, 2,400,000; home, 3,400,000; work, 1,700,000. Duplications of motor-vehicle with other classes numbered 200,000.

ACCIDENT COSTS amounted to about $148.5 billion. This includes wage loss of $37.7 billion, medical expense of $23.7 billion, administrative and claim settlement costs of insurance, $28.4 billion, property damage in motor-vehicle accidents of $26.8 billion, property loss in fires of about $9.4 billion and certain "indirect" costs of work accidents of about $22.5 billion.

THE DEATH RATE per 100,000 population in 1989 was 38.1, down 3 per cent from the 1988 rate.

Present indications are that in 1989, as in earlier years, accidents were the fourth leading cause of death, exceeded only by heart disease, cancer, and stroke.

Accidents were the leading cause of death among all persons aged 1 to 37 according to the latest detailed information (1987).

	1989 Deaths	Change from 1988	Deaths per 100,000 Persons	Disabling Injuries[a]
ALL CLASSES[b]	94,500	-2%	38.1	9,000,000
Motor-vehicle	46,900	-4%	18.9	1,700,000
Public nonwork	42,800			1,500,000
Work	3,900			200,000
Home	200			(c)
Work	10,400	-4%	4.2	1,700,000
Nonmotor-vehicle	6,500			1,500,000
Motor-vehicle	3,900			200,000
Home	22,500	0%	9.1	3,400,000
Nonmotor-vehicle	22,300			3,400,000
Motor-vehicle	200			(c)
Public	19,000	+3%	7.7	2,400,000

Source: National Safety Council estimates.

[a] Disabling beyond the day of accident. The totals shown are the best estimates for the current year and should not be compared with totals for previous years.

[b] The totals for the four separate classes add to more than the all classes figure due to rounding and because the motor-vehicle totals include some deaths and injuries also included in the work and home totals. This duplication amounted to about 4,100 deaths and 200,000 injuries in 1989.

[c] Less than 10,000.

Accident Facts is published annually in two editions: The Condensed Edition lists a few outstanding facts and is issued twice yearly—in March and August. This edition gives the revised 1989 estimates. The Complete edition is a 112-page book, published in August, containing charts, tables, and an analysis of the data for all kinds of accidents, including work, motor-vehicle, home, public, and farm. Ordering information is located on the reverse of this page. For inquiries regarding the content of Accident Facts, write to the Statistics Department, National Safety Council, 444 N. Michigan Avenue, Chicago, Illinois 60611, or call 312-527-4800.

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ACCIDENT TYPES that were most important in 1989, and changes from 1988, were as follows:

Type	1989	1988	Change
Motor-vehicle	46,900	48,900	-4%
Falls	12,400	12,200	+2%
Poison (solid, liquid)	5,600	5,100	+10%
Drowning	4,600	4,600	0%
Fires, burns	4,400	4,700	-6%
Suffocation—ingestion	3,900	4,000	-3%
Firearms	1,600	1,500	+7%
Poison (gas, vapor)	900	900	0%

DEATH TOTALS BY AGE GROUP in 1989, and changes from 1988, were as follows:

Age	1989	1988	Change
0 to 4	4,000	4,100	-2%
5 to 14	4,100	4,200	-2%
15 to 24	16,000	18,000	-11%
25 to 44	28,300	28,300	0%
45 to 64	15,400	15,000	+3%
65 to 74	8,500	8,600	-1%
75 and over	18,200	18,300	-1%

MOTOR-VEHICLE ACCIDENTS

There were approximately 46,900 deaths from motor-vehicle accidents in 1989, a decrease of 4 per cent from 1988. Motor-vehicle mileage was up 3 per cent. The death rate per 100,000,000 vehicle miles was 2.25, a decrease of 7 per cent from 1988.

Disabling injuries in 1989 numbered about 1,700,000. Costs, including wage loss, medical expense, administrative and claim settlement costs of insurance, and property damage amounted to $72.2 billion.

WORK ACCIDENTS

The 1989 death total for work accidents was approximately 10,400, a 4 per cent decrease from 1988. Disabling injuries numbered 1,700,000. The death total excluding agriculture was about 9,100, of which 1,100 occurred in manufacturing industries.

Industry Division	1989 Deaths	1988-89 Change	1989 Rates[a]	1988-89 Change
ALL INDUSTRIES	10,400	-4%	9	0%
Agriculture[b]	1,300	-13%	40[c]	-17%
Mining, quarrying[b]	300	0%	43	+13%
Construction	2,100	-5%	32	-6%
Manufacturing	1,100	0%	6	0%
Transportation and public utilities	1,400	-7%	24	-8%
Trade[b]	1,100	0%	4	0%
Services[b]	1,500	0%	4	0%
Government	1,600	0%	9	0%

[a] Deaths per 100,000 workers in each division.

[b] Agriculture includes forestry and fishing. Mining and quarrying includes oil and gas extraction (preliminary MSHA report indicate 115 deaths in coal, metal and nonmetal mining in 1989). Trade includes wholesale and retail trade. Services includes finance, insurance, and real estate.

[c] Agriculture rate excludes deaths of persons under 14 years of age. Rates for other industry divisions do not require this adjustment. Deaths of persons under 14 are included in the agriculture death total.

Total cost, including loss from business fires, amounted to about $48.5 billion.

In addition to the 10,400 workers killed while at work 36,900 died from off-the-job accidents—a death total of 47,300. Workers injured in both kinds of accidents numbered about 4,500,000.

HOME ACCIDENTS

Home accident deaths in 1989 totaled approximately 22,500, no change from the 1988 total. Disabling injuries numbered 3,400,000. Costs—wage loss, medical expense, fire losses, administrative and claim settlement costs of insurance—were $18.2 billion.

PUBLIC ACCIDENTS

There were approximately 19,000 deaths in public nonmotor-vehicle accidents during 1989, an increase of 3 per cent from the 1988 total. Disabling injuries numbered approximately 2,400,000. Wage loss, medical expense, fire losses, administrative and claim settlement costs of insurance amounted to $12.5 billion.

Crash Cushion

The Guard Rail Energy Absorbing Terminal is a compact, portable crash cushion that protects motorists from potential hazards on roadways that are narrowed by construction.

The company says the system is ideal for sites such as portable concrete median barrier ends, bridge piers, temporary or permanent safety walls and light posts.

The system consists of crushable cartridges surrounded by a framework of triple-corrugated-steel guard rail. When hit head on, cartridges crush to absorb the energy of the impact, while the steel guard-rail side panels telescope. When hit from the side, the unit gently redirects the errant vehicle. — **Energy Absorption Systems Inc.,** One E. Wacker Dr., Chicago, IL 60601.

EMERGENCY STROBE

Flex-O-Lite has expanded its highway safety equipment line to include the new Emergency Strobe 180 (ES180). The high intensity strobe, which operates with a push-button switch, can be used on any terrain and in all weather conditions. The ES180 has its own carrying case and fits easily on the back seat of a compact car.

The emergency light is powered by a self-contained, six-volt battery that provides 42 flashes per minute for an average of 100 hours. The strobe is a safe alternative to emergency flares, according to the manufacturer. — **Flex-O-Lite,** 8301 Flex-O-Lite Dr., P.O. Box 4366, St. Louis, MO 63123.

EMERGENCY PHONE

A new cellular telephone, called the 68 EMS, is now available from Motorola for use by emergency medical service personnel. The phone is designed to transmit data from heart monitors at the scene of an emergency to a command post at a hospital. Physicians at the hospital can immediately confirm the patient's condition and specify course of treatment over the phone. The unit, which can also be used as a conventional cellular phone, is light and compact.

User-friendly features include speed dialing, last number redial, and hands-free, eyes-free operation to allow paramedics to focus attention on the patient. The phone has dual-system registration that allows for two phone numbers. —**Motorola Inc.,** General Systems Group, 1475 W. Shure Dr., Arlington Heights, IL 60004.

RAISED MARKERS

The 3M company has introduced a new reflective raised pavement marker claimed to be five times brighter than industry standards. The Series 280 Centerlite marker's reflective lens gives off high intensity light when illuminated by a vehicle's headlights, even under wet, nighttime conditions. The lens is imbedded within the marker to help maintain its brightness for the life of the marker.

The computer-designed base of the raised marker, which is highly resistant to impact from vehicles, alerts drivers with a "rumble" when driven over. The markers are available with white, yellow, blue or green bases and the lenses are availble in white, yellow, red, blue or green. Centerlite markers are recommended for use on asphalt or portland cement surfaces. — **3M,** P.O. Box 33600, St. Paul, MN 55133-3600.

DUST CONTROL

Liquid calcium chloride is an effective dust control agent for unpaved surfaces, according to Dow Chemicals. A new product, Liquidow, works over a wide range of temperatures, humidity, and traffic to keep dust from flying into the air when vehicles are driven over the surface.

The firm recommends the product be applied to unpaved roads during the spring after a rain, while moisture is still in the ground. Liquidow's ability to draw in moisture helps keep the improved surface damp and dust down. The product resists evaporation even on hot, dry days, according to the company. As the chemical slowly penetrates the unpaved surface for several inches, the road becomes compacted and stabilized over time. — **Dow Chemical U.S.A.,** Midland, MI 48674.

Mindless Mayhem

Accidents

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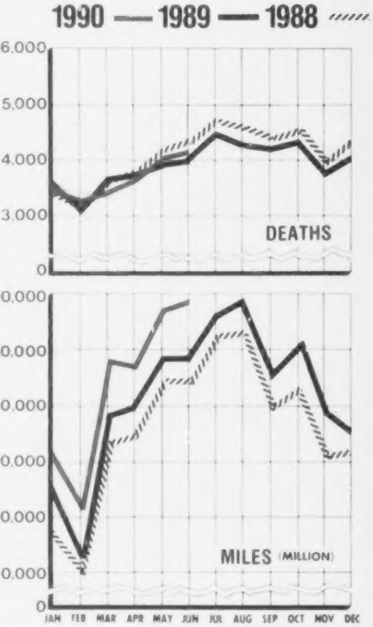
June Traffic Deaths Up 4%

BY MARY E. JOHNSTON and URSULA ZUEHLKE

TRAFFIC SUMMARY

Month	Deaths 1990	Deaths 1989	Change
June	4,150	3,980	+ 4%
6 months	22,000	21,890	+ 1%
12 months (Ending June, 1990)	47,010	48,380	− 3%



Motor-vehicle deaths in June totaled 4,150, an increase of 4 percent from the June 1989 total of 3,980.

Deaths for the six-month period ending June totaled 22,000, an increase of one percent from the 1989 six-month total of 21,890.

Disabling injuries for 1990 are estimated to be slightly more than 790,000. These are injuries resulting in disability beyond the day of the accident, and do not include minor injuries, which probably totaled as many more.

The cost of motor-vehicle accidents for 1990 is estimated to be about $32 billion.

Based on preliminary vehicle mileage reports for this year, the estimated annual mileage death rate is 2.3 (deaths per 100 million vehicle miles).

State Experience

Among the 48 states reporting June experience, 18 states and the District of Columbia had fewer deaths than in the preceding June, and 28 states showed increases in deaths. Two states showed no change in the number of fatalities. For the six-month period, 27 states and the District of Columbia showed decreases in the number of deaths, while 21 states showed increases.

New Hampshire	−29%
Vermont	−22%
Rhode Island	−21%
Wyoming	−17%
New Mexico	−14%
Massachusetts	−13%
Nebraska	−12%
Arkansas	−11%
Oregon	−10%
South Dakota	− 9%
Ohio	− 9%
Minnesota	− 8%
Maine	− 8%
West Virginia	− 8%
Louisiana	− 7%
Iowa	− 7%
New York	− 7%
Arizona	− 6%
Colorado	− 6%
North Carolina	− 6%
Michigan	− 5%
Idaho	− 5%
California	− 3%
Illinois	− 2%
Texas	− 2%
South Carolina	− 1%
Florida	− *%

State Traffic Deaths

Deaths are reported by state traffic authorities. All figures are preliminary. To ensure proper comparisons, 1988 and 1989 figures cover the same reporting period as those for 1990.

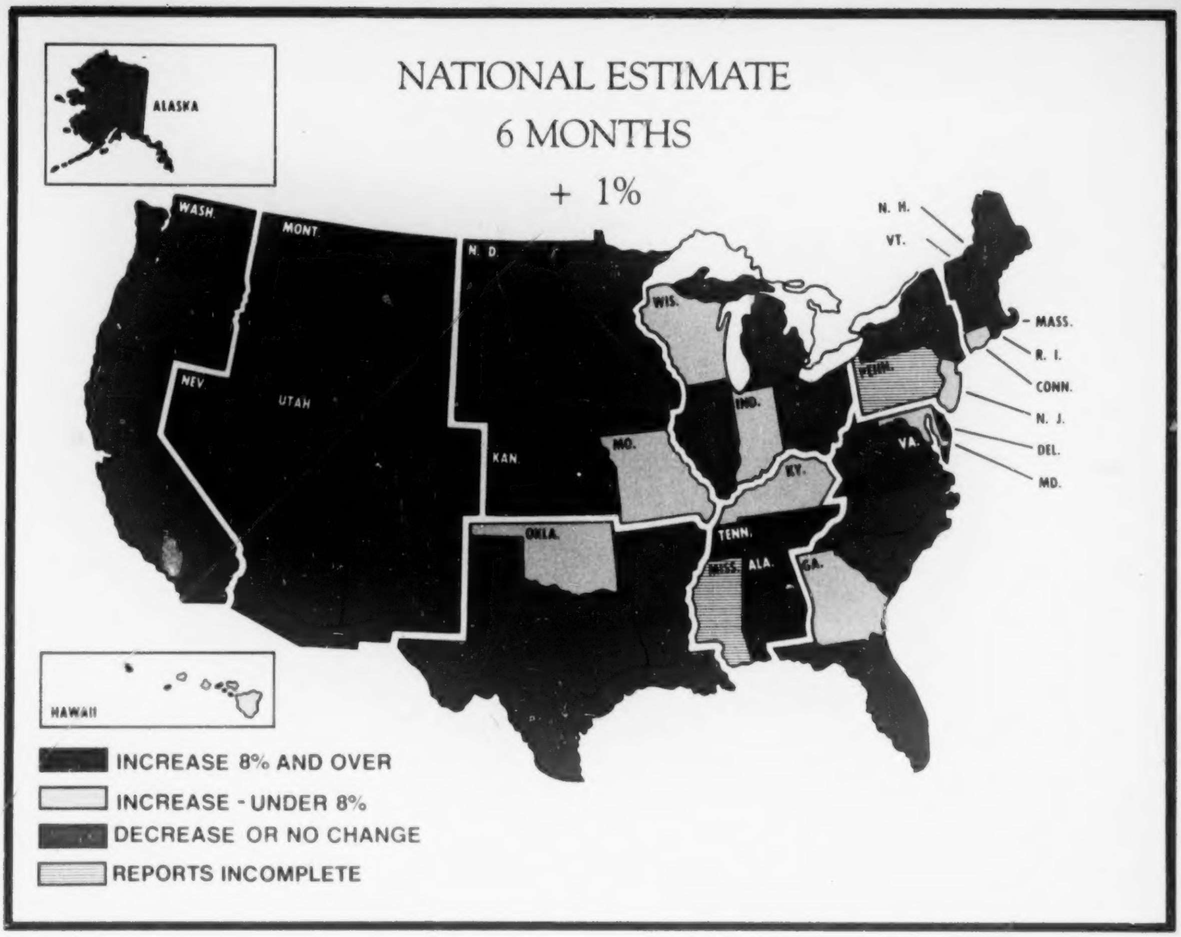
Population Rate: U.S. population rate and state population rates are the estimated annual number of deaths per 100,000 population. U.S. population rate is based on the July 1, 1990, population estimate; state population rates are based on July 1, 1989, population estimates, U.S. Bureau of the Census, Washington, D.C.

States shown in CAPS had fewer deaths in 1990 than they did in 1989 for the same reporting period.

Mileage Rate: The number of deaths per 100 million vehicle miles of travel.

		DEATHS IDENTICAL PERIODS			PERCENT CHANGES			
STATE	NO. OF MOS.	1990	1989	1988	1989 TO 1990	1988 TO 1990	1990 POP. RATE	1990 MILE. RATE
Total U.S.	**6**	**22,000**	**21,890**	**22,410**	**+ 1%**	**– 2%**	**18.8**	**2.3**
Alabama	6	507	471	473	+ 8%	+ 7%	24.6	2.3
Alaska	6	38	34	29	+ 12%	+ 31%	14.4	2.2
ARIZONA	6	385	408	390	– 6%	– 1%	21.7	2.3
ARKANSAS	6	254	286	260	– 11%	– 2%	21.1	2.6
CALIFORNIA	6	2,279	2,355	2,257	– 3%	+ 1%	15.7	1.8
COLORADO	6	214	228	235	– 6%	– 9%	12.9	1.6
Connecticut	6	179	178	209	+ 1%	– 14%	11.1	1.4
Delaware	6	67	44	84	+ 52%	– 20%	19.9	2.0
D. OF C.	6	20	45	29	– 56%	– 31%	6.6	1.2
FLORIDA	6	1,552	1,559	1,514	– *%	+ 3%	24.5	2.9
Georgia	6	750	725	751	+ 3%	– *%	23.3	2.3
Hawaii	6	74	71	71	+ 4%	+ 4%	13.3	1.8
IDAHO	6	90	95	106	– 5%	– 15%	17.8	2.1
ILLINOIS	6	730	742	784	– 2%	– 7%	12.5	1.9
Indiana	6	457	443	491	+ 3%	– 7%	16.3	1.8
IOWA	6	203	219	237	– 7%	– 14%	14.3	1.8
Kansas	6	232	179	218	+ 30%	+ 6%	18.5	2.3
Kentucky	6	391	371	398	+ 5%	– 2%	21.0	2.4
LOUISIANA	6	347	375	402	– 7%	– 14%	15.8	1.9
MAINE	6	86	93	113	– 8%	– 24%	14.1	1.5
Maryland	6	345	324	365	+ 6%	– 5%	14.7	1.8
MASSACHUSETTS	6	274	316	297	– 13%	– 8%	9.3	1.3
MICHIGAN	6	671	708	727	– 5%	– 8%	14.5	1.7
MINNESOTA	6	213	232	253	– 8%	– 16%	9.8	1.1
Mississippi	4	212	221	204	– 4%	+ 4%	24.3	2.9
Missouri	6	499	488	502	+ 2%	– 1%	19.3	2.1
Montana	6	91	66	89	+ 38%	+ 2%	22.6	2.3
NEBRASKA	6	106	120	121	– 12%	– 12%	13.2	1.6
Nevada	6	155	121	118	+ 28%	+ 31%	27.9	3.2
NEW HAMPSHIRE	6	70	99	78	– 29%	– 10%	12.6	1.5
New Jersey	6	429	415	472	+ 3%	– 9%	11.1	1.4
NEW MEXICO	6	212	247	206	– 14%	+ 3%	27.7	2.7
NEW YORK	6	917	986	873	– 7%	+ 5%	10.2	1.7
NORTH CAROLINA	6	625	666	675	– 6%	– 7%	19.0	2.2
North Dakota	6	45	31	45	+ 45%	0%	13.6	1.6
OHIO	6	651	719	727	– 9%	– 10%	11.9	1.6
Oklahoma	6	305	285	299	+ 7%	+ 2%	18.9	1.9
OREGON	6	252	279	283	– 10%	– 11%	17.9	2.0
Pennsylvania	4	507	528	539	– 4%	– 6%	12.6	1.9
RHODE ISLAND	6	42	53	59	– 21%	– 29%	8.4	1.5
SOUTH CAROLINA	6	498	501	488	– 1%	+ 2%	28.4	3.3
SOUTH DAKOTA	6	59	65	61	– 9%	– 3%	16.5	1.8
Tennessee	6	553	512	575	+ 8%	– 4%	22.4	2.3
TEXAS	6	1,519	1,543	1,519	– 2%	0%	17.9	2.0
Utah	6	126	117	132	+ 8%	– 5%	14.8	2.0
VERMONT	6	40	51	50	– 22%	– 20%	14.1	1.4
Virginia	6	531	445	469	+ 19%	+ 13%	17.4	1.8
Washington	6	385	321	343	+ 20%	+ 12%	16.2	1.7
WEST VIRGINIA	6	202	220	220	– 8%	– 8%	21.8	2.8
Wisconsin	6	337	336	345	+ *%	– 2%	13.8	1.6
WYOMING	6	48	58	58	– 17%	– 17%	20.2	1.8
Puerto Rico#	2	86	103	114	– 17%	– 25%	18.9	—
Virgin Islands#	6	13	6	9	+117%	+ 44%	46.8	—
— CANADIAN PROVINCES —								
Alberta	6	182	177	180	+ 3%	+ 1%	23.0	—
British Columbia	6	279	245	270	+ 14%	+ 3%	26.4	—

#Not included in the TOTAL U.S. death count or rates.
*Less than 0.5%.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+ 1%
ALASKA
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N. D.
NEV.
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MASS.
R. I.
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N. J.
DEL.
MD.
INCREASE 8% AND OVER
INCREASE - UNDER 8%
DECREASE OR NO CHANGE
REPORTS INCOMPLETE

MOTOR-VEHICLE DEATHS AND CHANGES TOTAL U.S.

	Deaths				Percentage Changes				
					Corresponding Month			4 Months Moving Avg. +	
Months	1987	1988	1989	1990	1988-1990	1988-1989	1989-1990	1988-1989	1989-1990
January	3,301	3,390	3,540	3,480	+ 3%		− 2%		− 5%
February	2,997	3,130	3,090	3,290	+ 5%		+ 6%		− 3%
March	3,517	3,600	3,660	3,440	− 4%		− 6%		− 3%
April	3,621	3,760	3,720	3,620	− 4%		− 3%		− 1%
May	4,264	4,210	3,900	4,020	− 5%		+ 3%		0%
June	4,279	4,320	3,980	4,150	− 4%		+ 4%		− *%
6 Months	21,979	22,410	21,890	22,000	− 2%		+ 1%		
July	4,472	4,720	4,460			− 6%		− 6%	
August	4,815	4,550	4,250			− 7%		− 7%	
September	4,300	4,370	4,190			− 4%		− 6%	
October	4,535	4,520	4,310			− 5%		− 5%	
November	4,169	3,980	3,770			− 5%		− 5%	
December	4,020	4,350	4,030			− 7%		− 5%	
TOTAL	48,290	48,900	46,900	47,010 †		− 4%			

The 1987 figures are from the National Center for Health Statistics. The 1988, 1989 and 1990 figures are National Safety Council estimates.

+Four Month Moving Average is based on changes between the totals for four months instead of one month. For example, the June figure shows the change between the totals for March 1989 - June 1989 and March 1990 - June 1990, etc. Adding several months together tends to smooth out single-month changes which may be affected by differences in the number of weekends in a month from one year to the next, random variations, etc.

† Deaths for the 12-month period ending June 1990.

*Less than 0.5%.

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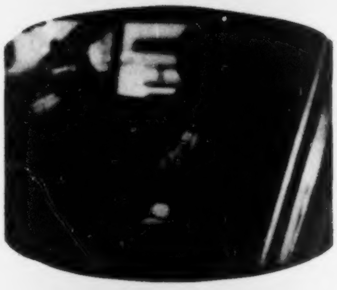

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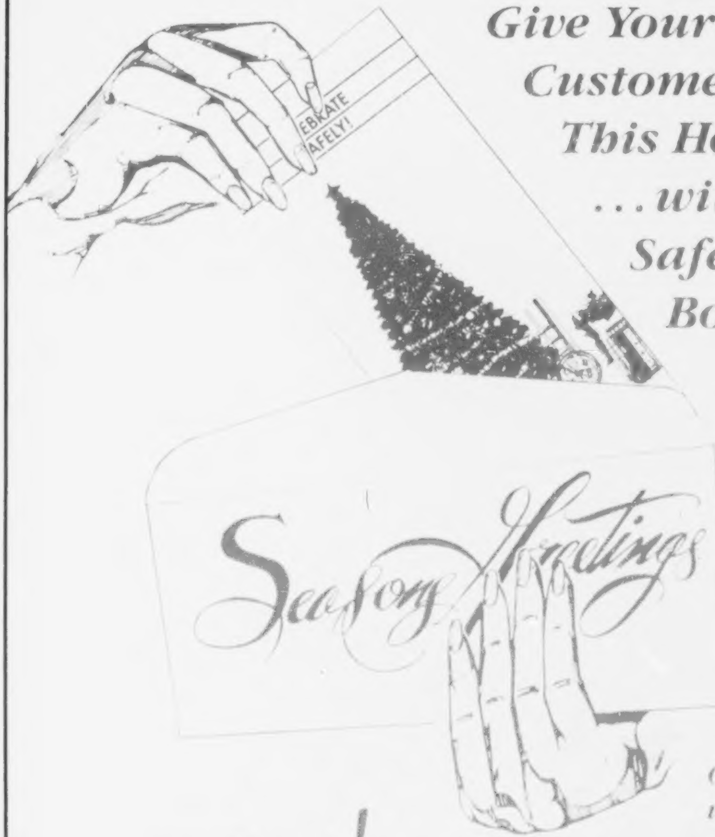

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